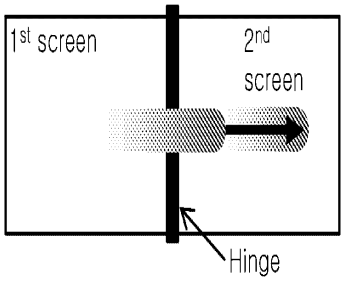
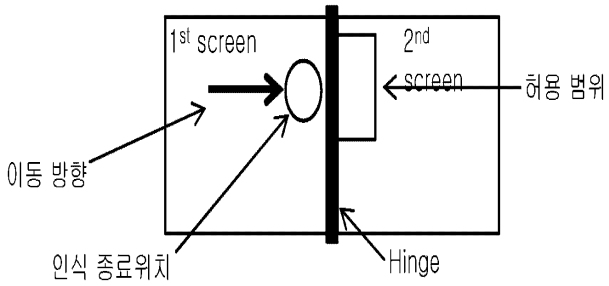
3. 발명의 설명

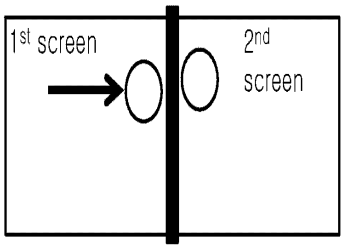
3.2 발명의 구성 : Power Scroll 인식 방법

2. Drag와 Flick을 섞어서 입력 하는 경우

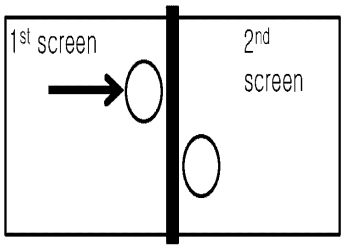
- 1st screen에서 Touch & Drag하여 Hinge를 건넌 후에 2nd screen에서 빠르게 Flick 하는 경우
- 1번의 경우와 다르게 이 경우 Power scroll Threshold를 벗어나게 되므로 일반 Gesture가 두 화면 사이에 연결되는 기준을 따라야 한다.
- Gesture 연결 기준은 Gesture가 화면 전환으로 인식되지 않을 때 시간과, 두 화면간에 Gesture의 방향 및 이어지는 부분간에 위치가 연결되는지의 여부로 파악할 수 있다.
- Gesture가 하나의 연결일 경우 Drag와 Flick을 섞어서 입력하는 경우에도 Power Scroll 입력이 적용된다.







<연결 동작>

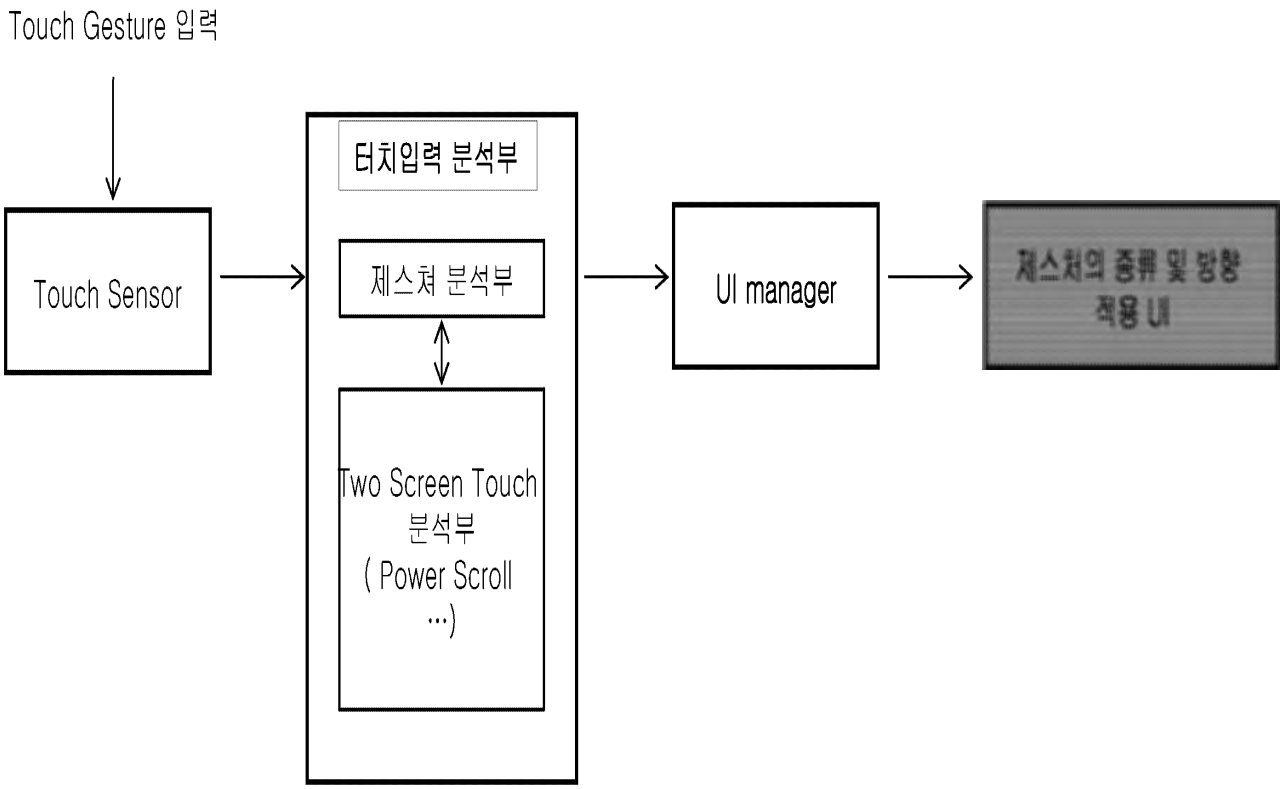


<연결 동작 아님>

8/22 ※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.2 발명의 구성 : S/W 구조도



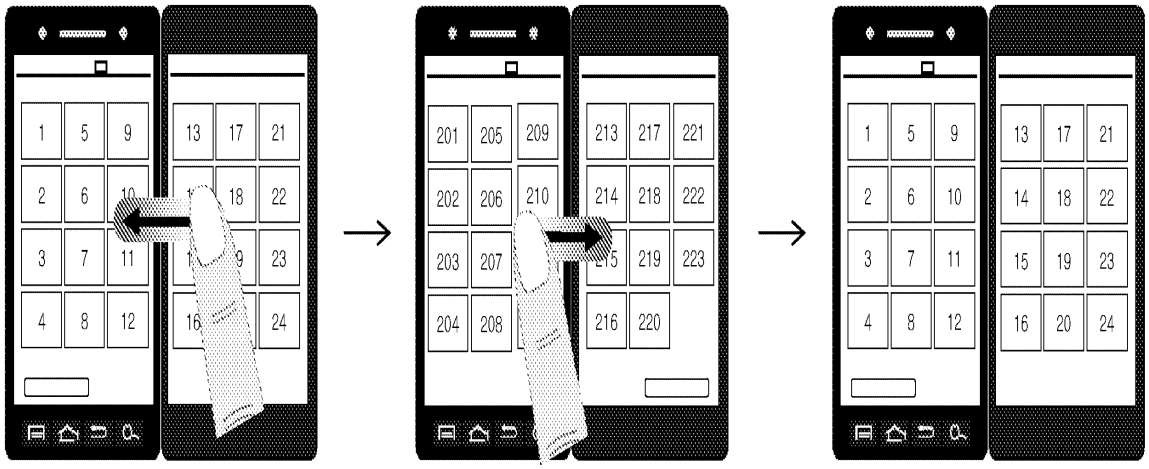
※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

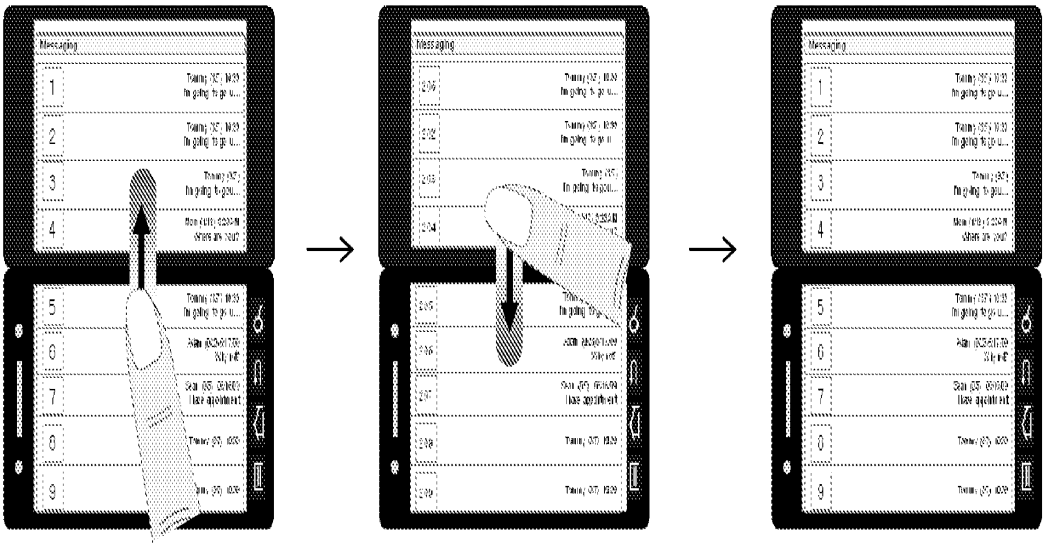
3.3 발명의 예시

Power Scroll

1. 세로 Display에서 Power Scroll



2. 가로 Display에서 Power Scroll



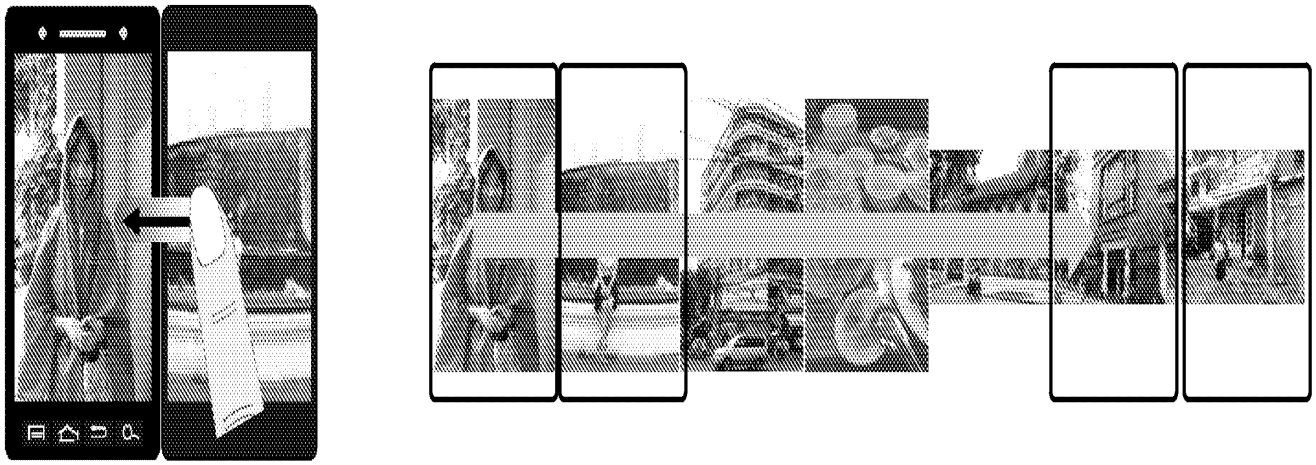
10/22 ※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.3 발명의 예시

Power Scroll

3. Full-screen Image의 처음과 끝으로 이동



4. Web-page의 처음과 끝으로 이동



* 가로로 놓고 세로로 스크롤 하는 사례임

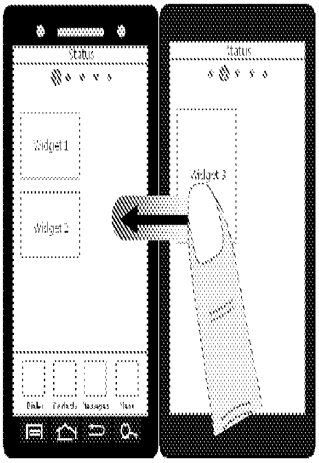
※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

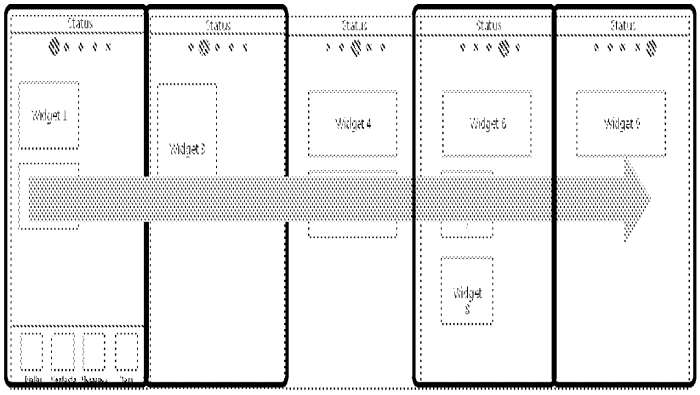
3. 발명의 설명

3.3 발명의 예시

Power Scroll

5. Home-page에서 처음과 끝으로 이동





※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.3 발명의 기대 효과

- 빠르게 List의 처음/마지막으로 이동할 수 있는 방법을 제공하여 기존에 가질 수 있는 불편함을 직관적 Gesture를 활용하여 해결할 수 있음
- Hinge를 거치는 입력을 활용하여 기존에 경험하지 못한 Interaction을 할 수 있다.

3.5 발명의 응용분야

- Dual Display를 사용할 수 있는 Device

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

4. 권리청구범위(Claims)

1. Dual Display Device에서 Hinge를 지나는 Flick Gesture로 List나 Web page의 처음/끝으로 이동하는 방법
2. Dual Display Device에서 Hinge를 지나는 Drag Gesture가 다음 화면에서 Flick으로 변할 경우 List나 Web page의 처음/끝으로 이동하는 방법
3. Dual Screen Device에서 Hinge를 지나는 Flick Gesture로 List나 Web page의 처음/끝으로 이동하는 방법
4. Dual Screen Device에서 Hinge를 지나는 Drag Gesture가 다음 화면에서 Flick으로 변할 경우 List나 Web page의 처음/끝으로 이동하는 방법

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

직무발명(고안)서 (Invention Disclosure Form)

<table>
<tr><td colspan="2">발명의 명칭(Title of Invention)
*발명(고안)의 내용을 표현할 수 있는 명칭을 간단 명료하게 기재</td><td colspan="3"></td></tr>
<tr><td colspan="5">Two Screen Touch Gesture를 이용한 Dual Screen Task 제어 방법</td></tr>
<tr><td colspan="2">관련기술 및 선출원</td><td colspan="3">*주1) 본 발명과 관련이 있는 공개자료(특허,논문,제품,규격서,사용설명서,인터넷자료 등)
*주2) 본 발명관 관련이 있는 발명자의 기 출원완료(출원번호) 및 출원 준비중(접수번호)</td></tr>
<tr><td rowspan="4">기술 출처
*해당부분 선택기재</td><td>등록/공개 특허 *주1)</td><td colspan="3"></td></tr>
<tr><td>관련문헌 또는제품 *주1)</td><td colspan="3"></td></tr>
<tr><td rowspan="4">본발명과 관련된 발명자의 선출원 *주2)</td><td rowspan="2">既 출원 완 료</td><td>발명의명칭</td><td></td></tr>
<tr><td>출원번호</td><td></td></tr>
<tr><td rowspan="2">출원초안 작성중</td><td>발명의명칭</td><td></td></tr>
<tr><td>접수번호</td><td></td></tr>
<tr><td colspan="2">관련 과제명</td><td colspan="3">Dual Display</td></tr>
<tr><td colspan="2">본 발명 적용가능 제품</td><td colspan="3">Mobile Device 外</td></tr>
<tr><td colspan="2">발명자 연락처</td><td colspan="3">[전화번호] Office(필수): 010-2431-1289 (내선번호 없음) Cell Phone(선택): 010-2431-1289
[E-mail Account] : joonkyu.seo@samsung.com</td></tr>
</table>

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

1. 본 발명의 목적(배경)

어이디어의 기술분야 및 해당 Trend

- 분야 : Device의 입력방식 및 Display 방식 外
- Trend

1. Full Touch Smart Phone의 확산으로 차세대 Display 기술 선점을 위한 경쟁이 치열함.
2. Dual Display가 채용된 Device가 출시되고 있으나 두개 화면을 사용자가 효과적으로 컨트롤 할 수 있는 솔루션이 명쾌하게 도출되지 않았음
3. 디바이스에 다양한 방식으로 재미있고 직관적으로 명령을 입력하는 UI에 대한 니즈

목적

- 목 적 : Dual Display가 적용된 단말기에서 새로운 입력 방법으로 사용자에게 새로운 경험을 제공한다.

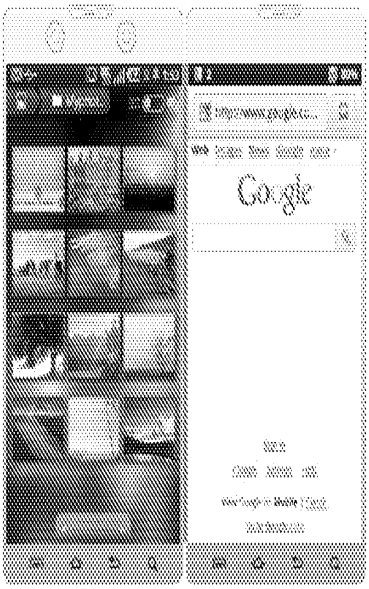
※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

2. 관련 기술 설명

2.1 차세대 Display

Dual Display

두 개의 Display를 활용하여 보다 다양한 사용 경험을 제공할 수 있는 Device
두 개의 화면을 활용한 다양한 View 모드를 사용할 수 있다.



Multi-Mode
서로 다른 App을 각각의 화면에 표시하여 사용하는 View Mode



Split-Mode
하나의 App을 Depth를 다르게 보여주거나, 기능을 구분해서 보여주는 View Mode



Expand-Mode
하나의 화면을 확대해서 두개의 화면에 표시하는 View Mode

3/22

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

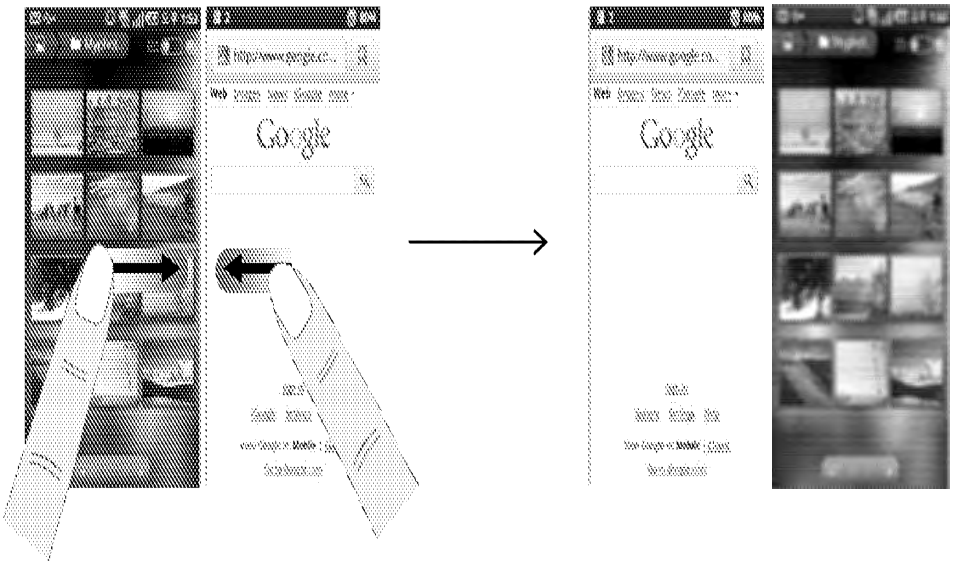
3. 발명의 설명

3.1 발명의 개요

- 구 성 : 터치 스크린 입력 디바이스
- 동작 개요 :

- Dual Display에서 두 화면에 동시에 Touch 했을 때 입력을 별도의 Gesture로 구분한다.
- 두 화면에 터치 입력이 입력이 되었을 경우 입력을 Two Screen Gesture로 인식한다.
- 입력된 터치 입력의 모션 방법, 속도를 파악하여 입력을 처리한다.
- 사용자는 간결하지만 자신이 의도한 대로 더욱 풍부한 인터랙션을 할 수 있다.

* 동시에 두 화면을 터치한 후에 Hinge 방향으로 Flick/Drag 할 경우 두 화면이 Swap 된다.



※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.2 발명의 구성 : 2 Screen Touch

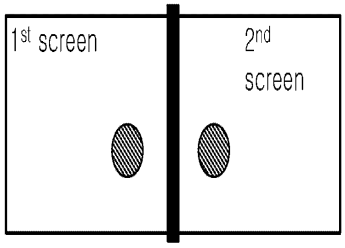
- 2 Screen Touch는 Hardware적으로나 Software적으로 분리된 화면에 대해서 두 개 이상의 터치를 했을 때의 동작을 다룬다.

- 두 개의 화면에 터치가 된 시점을 기준으로 Gesture를 인식한다.

- 하나의 스크린에서 인터렉션 중인 Touch Gesture가 있는 경우 다른 화면 Touch 시에 2 Screen Touch로 변경되고 기존 입력되던 인터렉션은 취소된다.

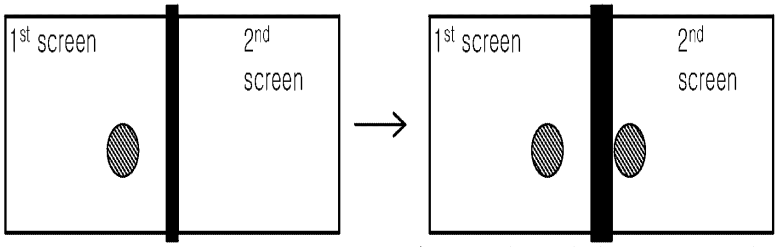
<인식의 방법>

1. 두 화면을 동시에 터치하는 경우



2. 한 화면을 터치한 후에 잠시 후에 다른 화면을 터치하는 경우

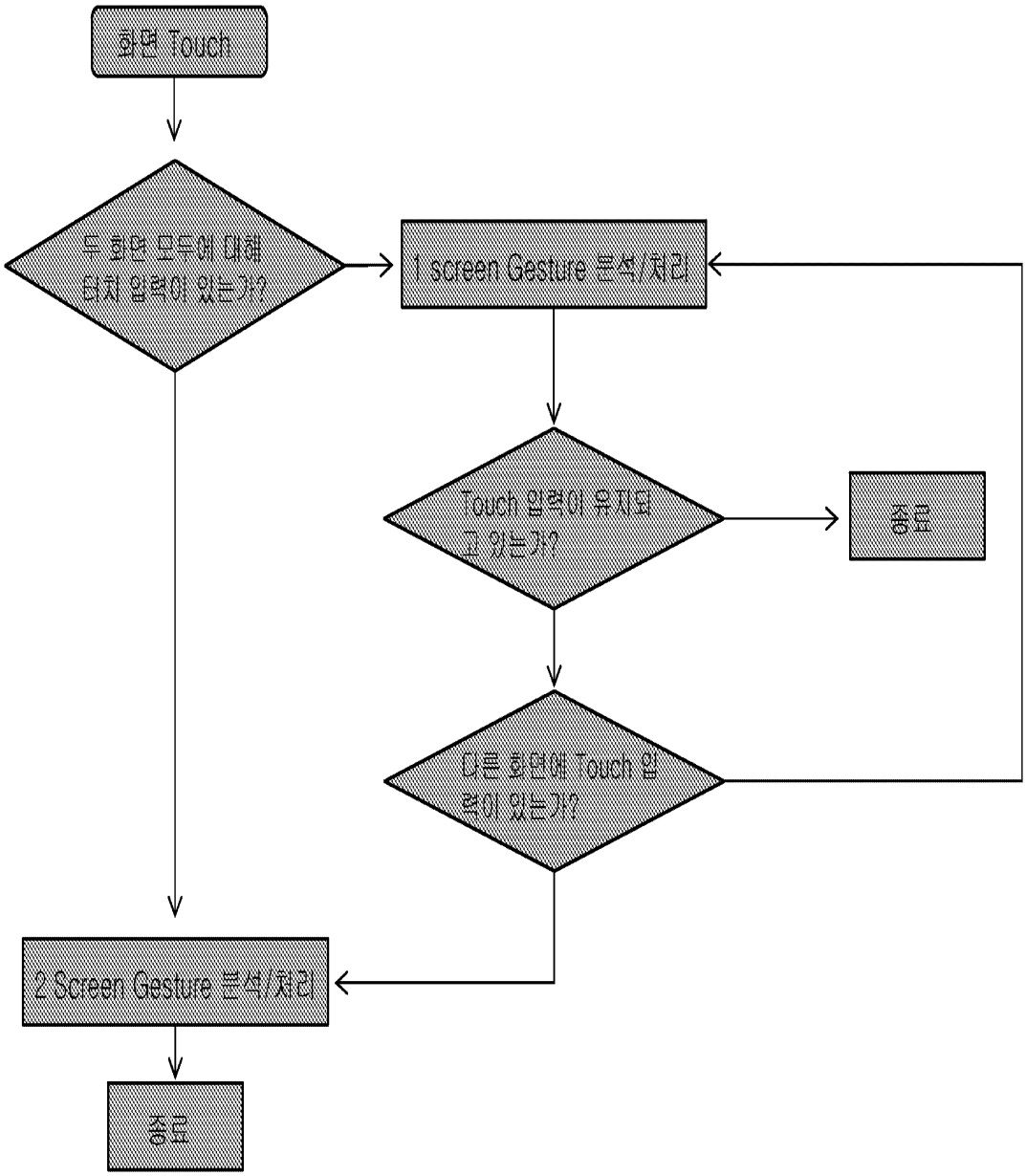
: 처음 터치한 스크린상에 App에 대한 컨트롤을 하게 된다.



※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

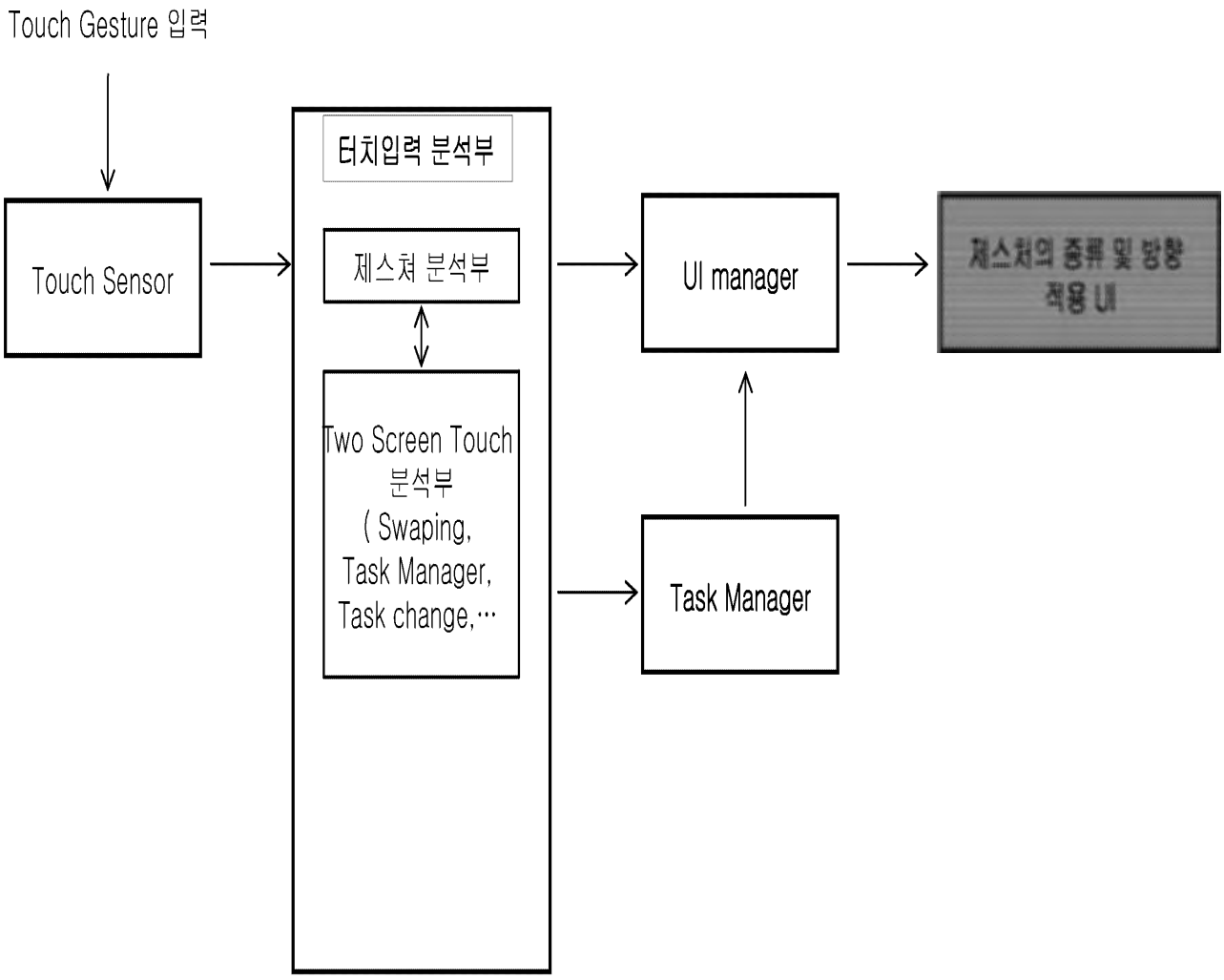
3.2 발명의 구성 : 2 Screen Touch



6/22 ※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.2 발명의 구성 : S/W 구조도

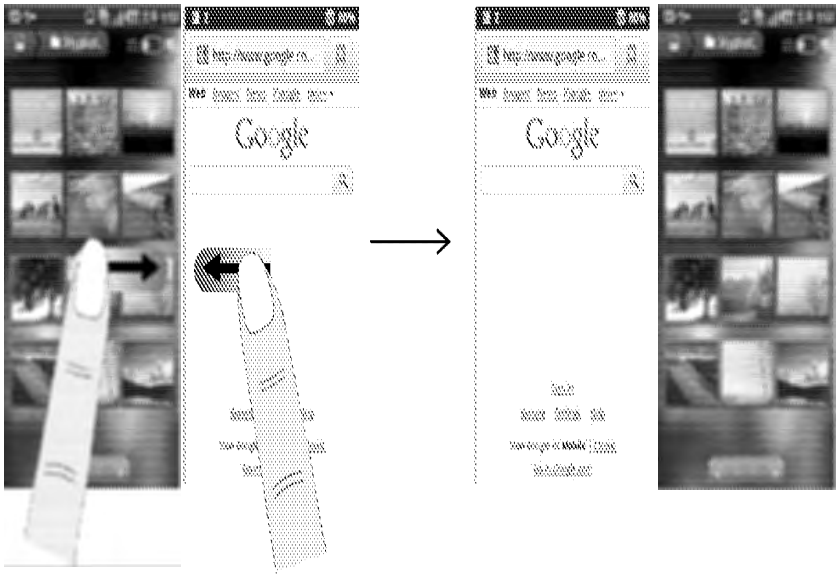


※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

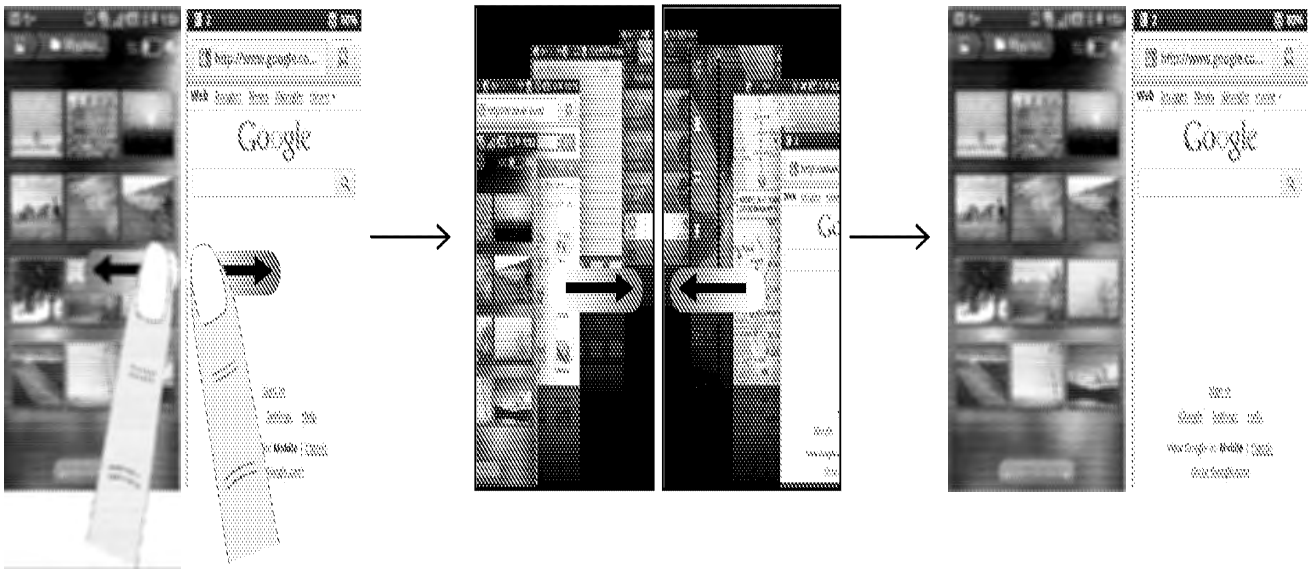
3. 발명의 설명

3.3 발명의 예시

1. 2 Screen 2 Finger Pinch Close



2. 2 Screen 2 Finger Pinch Open : Task Manager

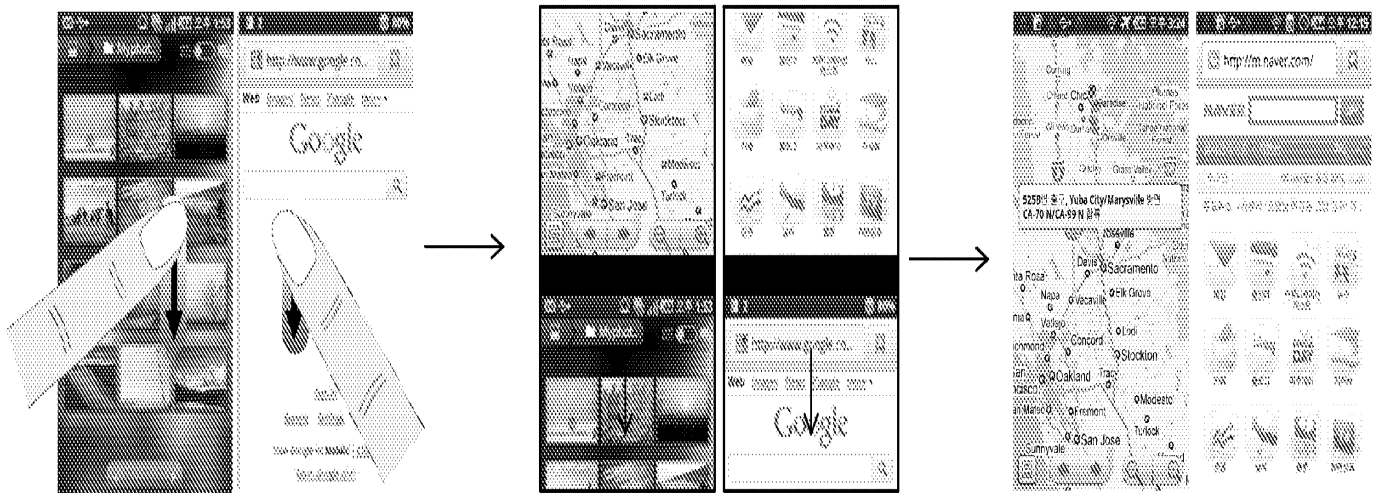


※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

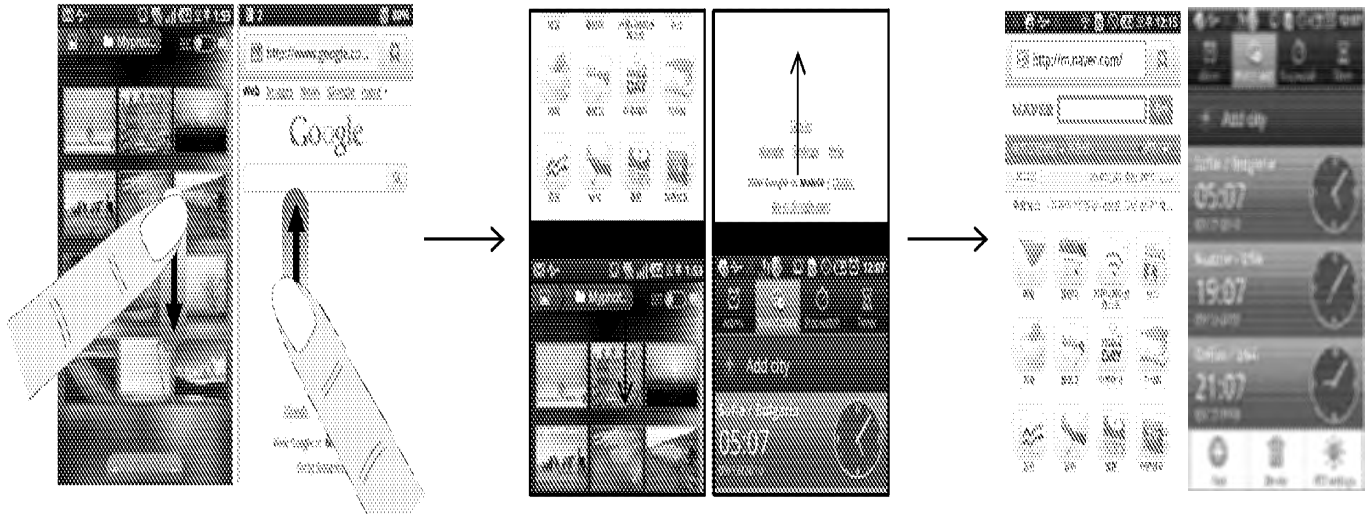
3.3 발명의 예시

3. 2 Screen 2 Finger Drag : Task Change #1



양쪽 화면 Task 전환 (서로 같은 방향)

4. 2 Screen 2 Finger Drag : Task Change #2



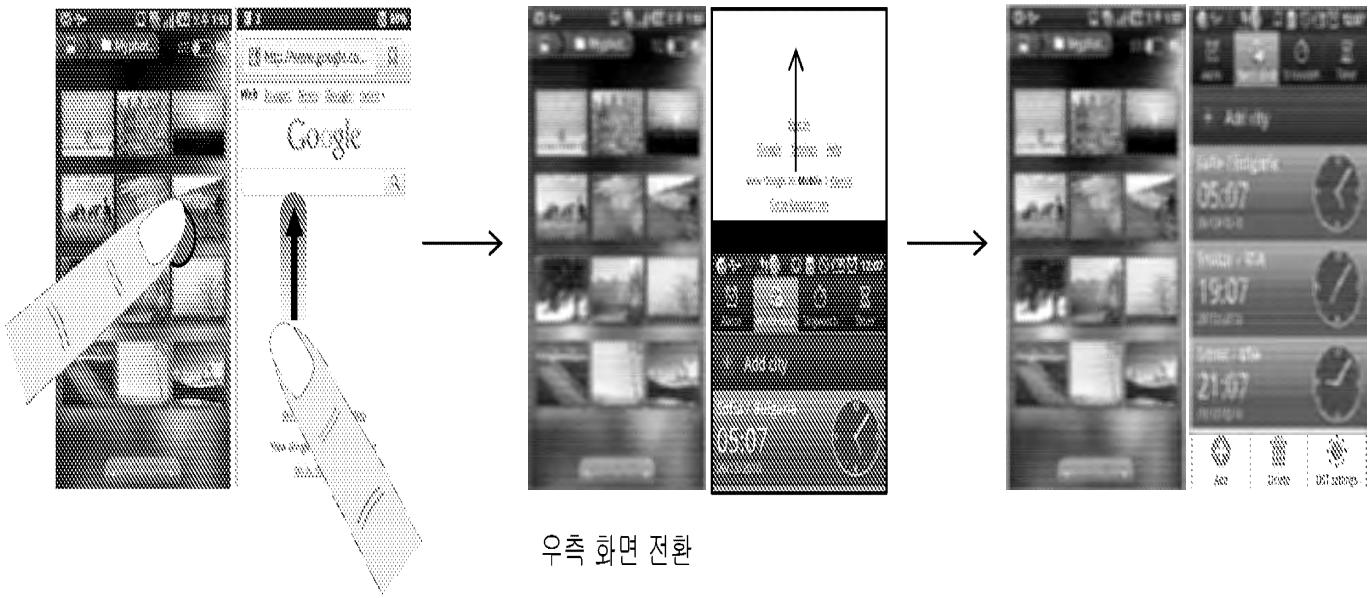
양쪽 화면 Task 전환 (서로 다른 방향)

9/22※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.3 발명의 예시

5. 2 Screen 1-Finger Hold another Drag : 1 Screen Task Change



우측 화면 전환

10/22 ※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.3 발명의 기대 효과

- Dual Display Mobile 제품을 사용하면서 화면을 전환하는데 있어서 가질 수 있는 불편함을 직관적 Gesture를 활용하여 해결할 수 있음
- 두 화면에 대한 Touch Gesture 활용하여 기존에 경험하지 못한 Interaction을 할 수 있다.

3.5 발명의 응용분야

- Dual Display를 사용할 수 있는 Device

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

4. 권리청구범위(Claims)

1. Dual Display/Screen Device에서 두 화면을 터치 하고 정해진 방향으로 Drag/Flick을 할 때 그에 대한 인터렉션이 수행되는 방법
2. Dual Display/Screen Device에서 싱글 화면 터치와 듀얼 화면 터치를 구분하는 방법
3. Dual Display/Screen Device에서 Gesture로 화면을 Swapping 하는 방법
4. Dual Display/Screen Device에서 Gesture로 Task 전환을 하는 방법
5. Dual Display/Screen Device에서 Gesture로 Task를 Managing 하는 방법

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

직무발명(고안)서 (Invention Disclosure Form)

발명의 명칭(Title of Invention) *발명(고안)의 내용을 표현할 수 있는 명칭을 간단 명료하게 기재				
Gesture를 활용한 Dual Screen Touch 제품의 화면 제어 방법				
관련기술 및 선출원		*주1) 본 발명과 관련이 있는 공개자료(특허,논문,제품,규격서,사용설명서,인터넷자료 등) *주2) 본 발명관 관련이 있는 발명자의 기 출원완료(출원번호) 및 출원 준비중(접수번호)		
기술 출처 *해당부분 선택기재	등록/공개 특허 *주1)			
	관련문헌 또는제품 *주1)			
	본발명과 관련된 발명자의 선출원 *주2)	既 출원 완 료	발명의명칭	
			출원번호	
		출원초안 작성중	발명의명칭	
			접수번호	
관련 과제명		Dual Display		
본 발명 적용가능 제품		Mobile Device 外		
발명자 연락처		[전화번호] **Office(필수): 010-2431-1289** (내선번호 없음) **Cell Phone(선택): 010-2431-1289** **[E-mail Account]** : joonkyu.seo@samsung.com		

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※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

1. 본 발명의 목적(배경)

어이디어의 기술분야 및 해당 Trend

- 분야 : Device의 입력방식 및 Display 방식 外
- Trend

1. Full Touch Smart Phone의 확산으로 차세대 Display 기술 선점을 위한 경쟁이 치열함.
2. Dual Display가 채용된 Device가 출시되고 있으나 두개 화면을 사용자가 효과적으로 컨트롤 할 수 있는 솔루션이 명쾌하게 도출되지 않았음
3. 디바이스에 다양한 방식으로 재미있고 직관적으로 명령을 입력하는 UI에 대한 니즈

목적

- 목 적 : Dual Display가 적용된 단말기에서 두 스크린을 활용한 다양한 View mode를 사용자가 쉽게 활용할 수 있도록 한다.

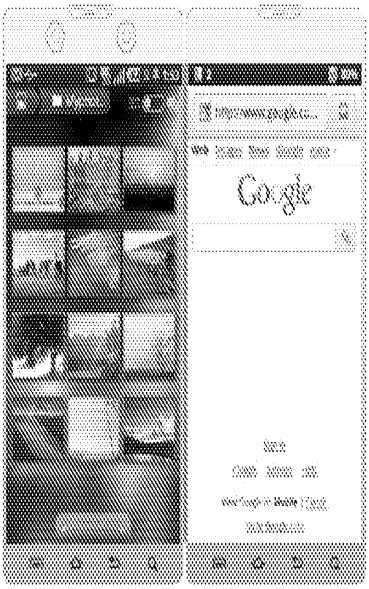
※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

2. 관련 기술 설명

2.1 차세대 Display

Dual Display

두 개의 Display를 활용하여 보다 다양한 사용 경험을 제공할 수 있는 Device
두 개의 화면을 활용한 다양한 View 모드를 사용할 수 있다.



Multi-Mode
서로 다른 App을 각각의 화면에 표시하여 사용하는 View Mode



Split-Mode
하나의 App을 Depth를 다르게 보여주거나, 기능을 구분해서 보여주는 View Mode



Expand-Mode
하나의 화면을 확대해서 두개의 화면에 표시하는 View Mode

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

2. 관련 기술 설명

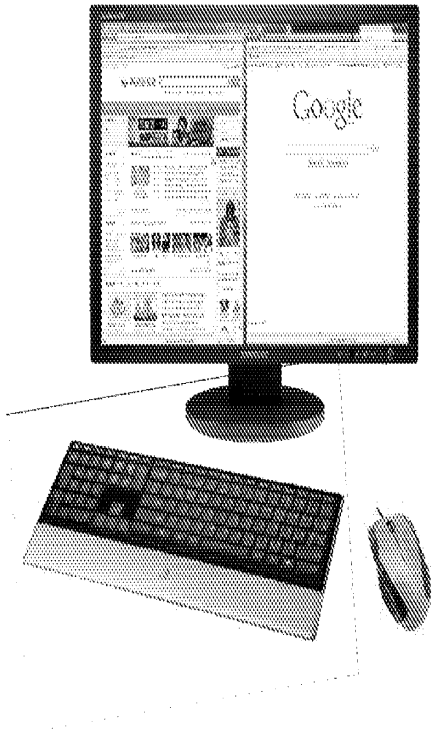
2.3 종래 기술의 문제점

문제점

기존 Dual Screen이 적용 가능한 제품은 PC와 같이 마우스 입력 및 키보드 입력이 가능한 제품이었다.

PC는 윈도우 기반 환경으로 윈도우 크기 변경 및 복수개의 형태를 화면에 표시할 수 있기 때문에 화면 모드를 구성하는 것에 문제가 없었으나 Mobile 제품은 입력장치 및 디스플레이의 한계로 PC와 같은 방식을 적용할 수 없다.

- Mobile 제품은 키보드 단축키와 같은 방법을 제공하기 어렵다.
- Mobile 제품의 App은 PC와 같은 윈도우 기반이 아니기 때문에 마우스로 윈도우를 줄이고 맞추는 것과 같은 기능을 제공하기 어렵다



※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

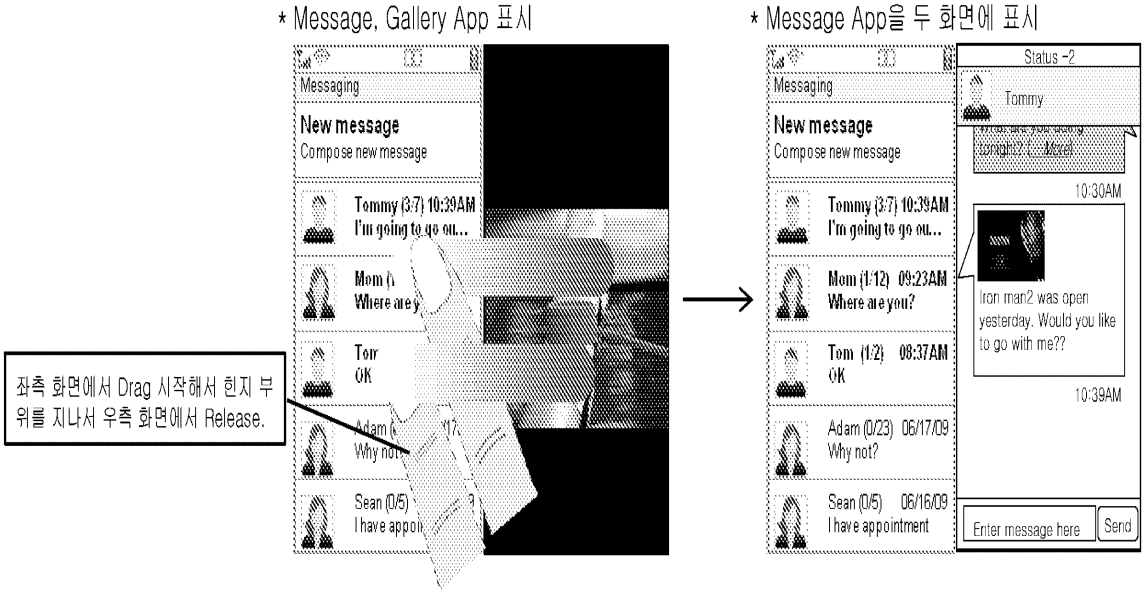
3. 발명의 설명

3.1 발명의 개요

- 구 성 : 터치 스크린 입력 디바이스
- 동작 개요 :

-듀얼 터치 스크린에서 각각 입력된 터치 입력 제스처가 연계성을 가지고 동작할 경우 Input 제어부에서 하나의 입력으로 수신한다.
- 각 터치 입력은 동작 방향, 터치 입력 개수를 파악하여 입력을 처리한다.
- 분석된 터치 입력에 따라 화면 전환이 동작 방향에 맞게 진행된다.

* 서로 다른 App을 두개의 화면에 Two Screen Touch Gesture를 입력하여 하나의 App을 두개의 화면에 표시하는 사례



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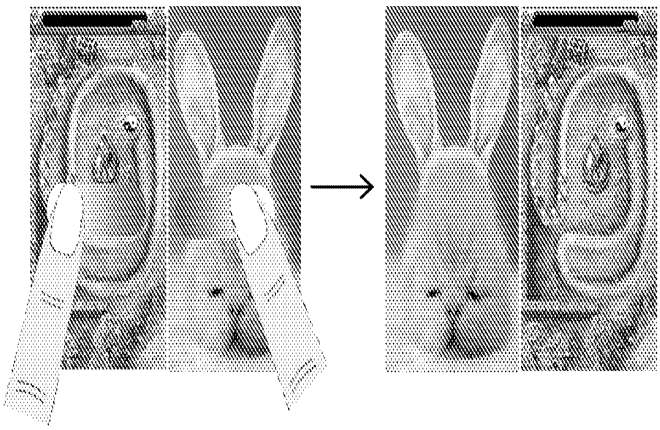
※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

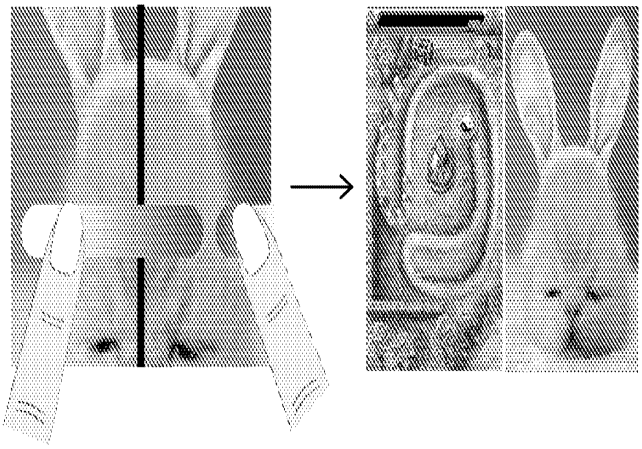
3.2 발명의 구성 : 터치 입력 인식

Two Screen Touch Gesture

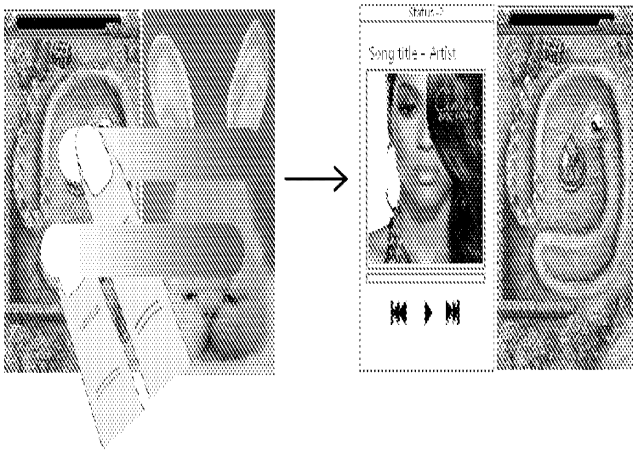
1. 독립된 두 개의 스크린에 동시에 입력된 Touch 입력



3. 복합 입력



2. 하나의 터치 입력이 두 스크린에 걸쳐서 입력



6/22 ※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.2 발명의 구성 : 연결 동작 인식 방법

- 두 스크린에 걸쳐서 입력되는 경우 동작의 연결성을 파악하는 방법

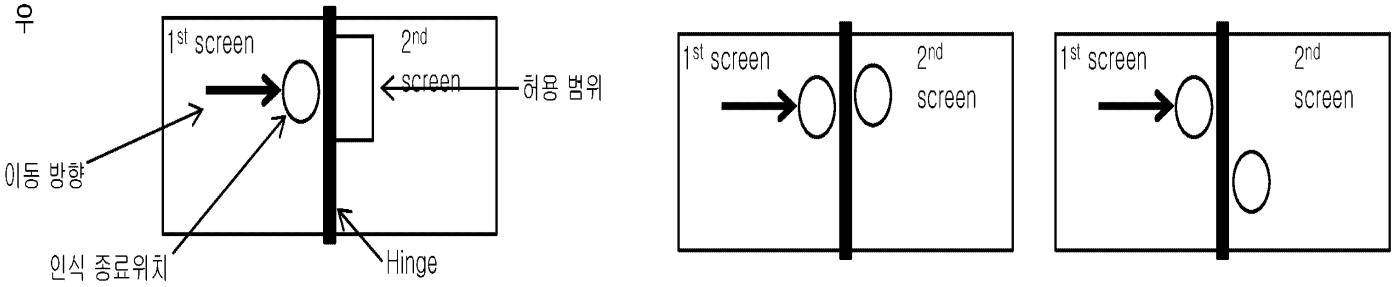
물리적으로 구분된 Dual Touch Screen은 스크린간에 Hinge로 인한 간격이 존재한다. 이 부분에서는 Touch 인식이 어렵기 때문에 터치 동작이 이 부분을 지나가는 동작은 별도의 연결성 파악은 시간, 방향, 위치의 3가지 정보를 이용할 수 있다. 3가지 정보는 필요에 따라 선택 가능하다.

1.시간을 통한 구분

Hinge로 인하여 Touch 인식이 끝나는 시점에서 재인식되는 순간까지 걸리는 시간이 허용 범위 이내인 경우

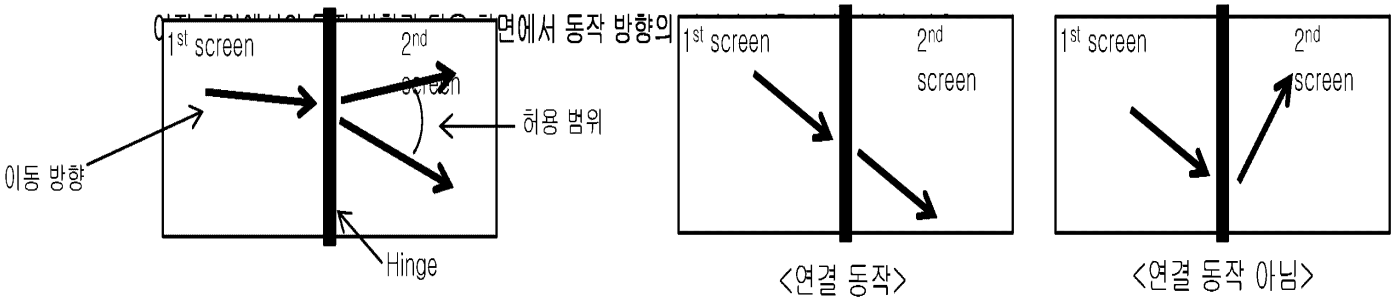
2.위치

Hinge로 인하여 Touch 인식이 끝나는 시점의 동작 방향을 기준으로 재인식되는 위치를 산출하였을 때 허용 범위 이내인 경우



<연결 동작> <연결 동작 아님>

3. 방향

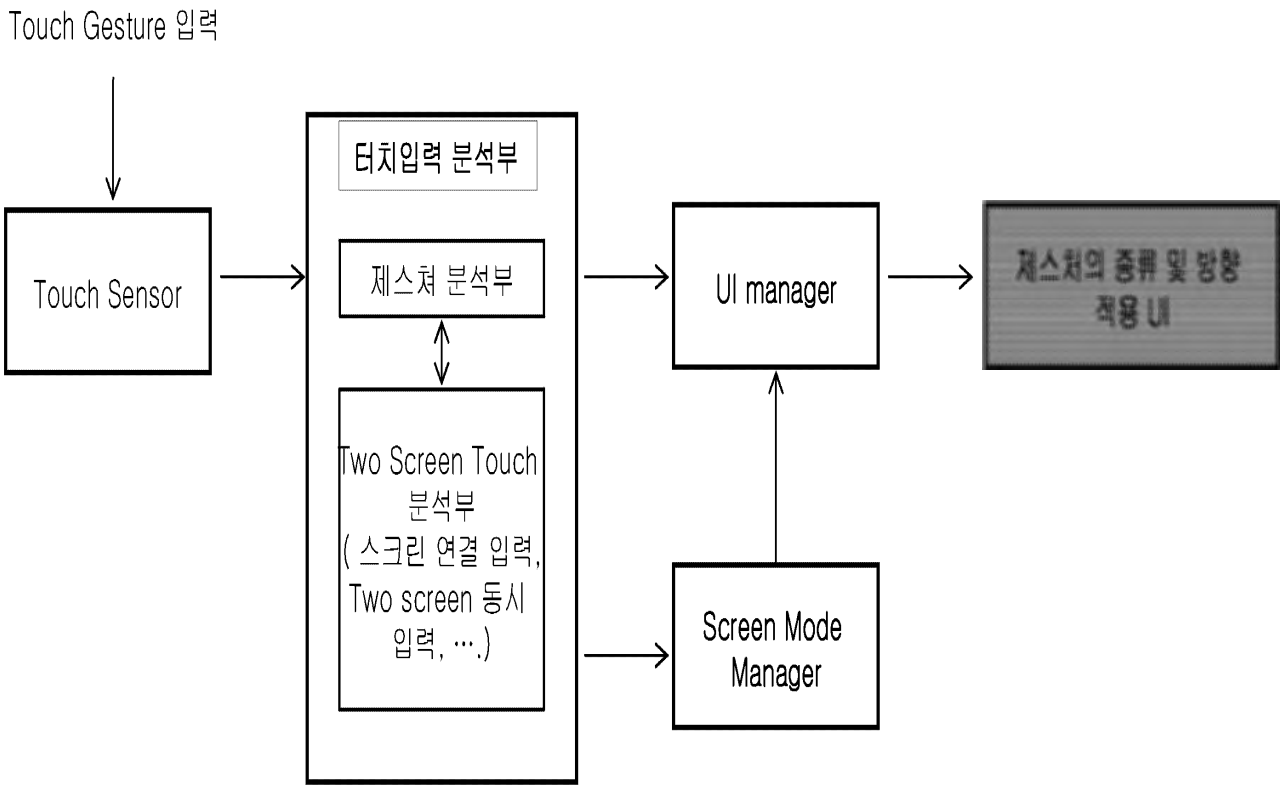


<연결 동작> <연결 동작 아님>

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.2 발명의 구성 : S/W 구조도

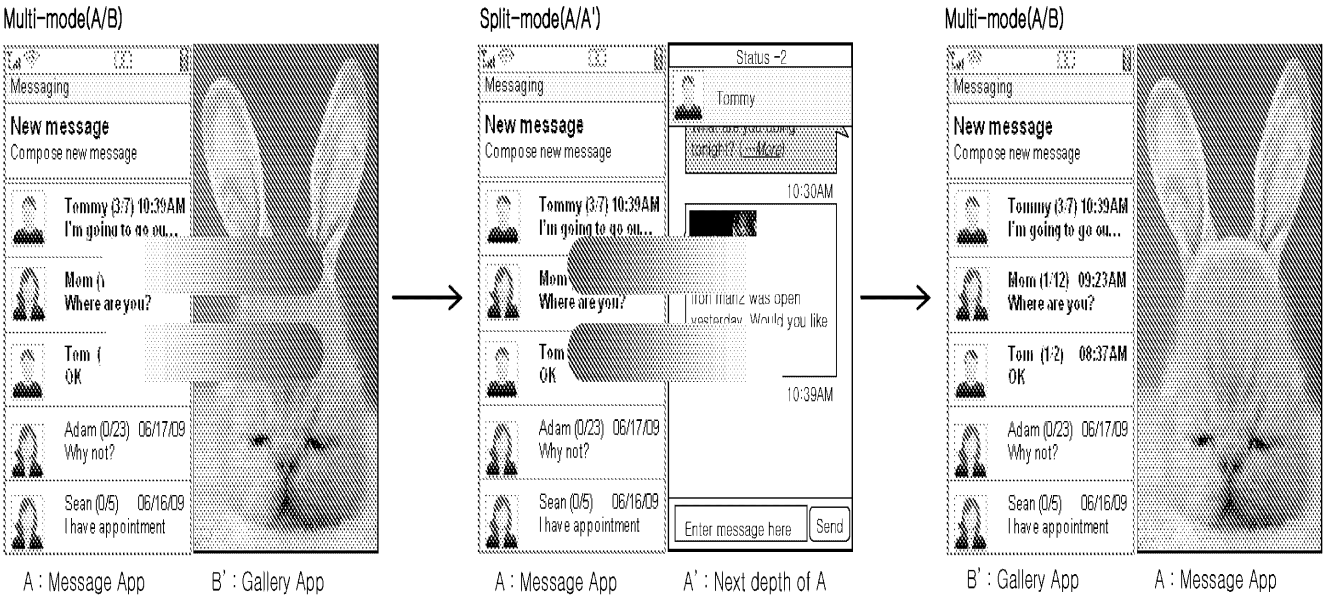


8/22 ※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.3 발명의 예시 - 1. Multi-mode에서 Split-mode로 View mode 전환

- 한 화면을 Two Touch 한 상태에서 힌지를 넘어서 다른 화면으로 Drag & Drop.
- Two Touch 한 상태에서 힌지 방향으로 Drag 시에 Mode change에 대한 Feedback으로 화면이 Shift되는 effect가 표시된다.
- Two Touch Drag가 힌지를 넘지 않으면 View mode가 변경되지 않는다.

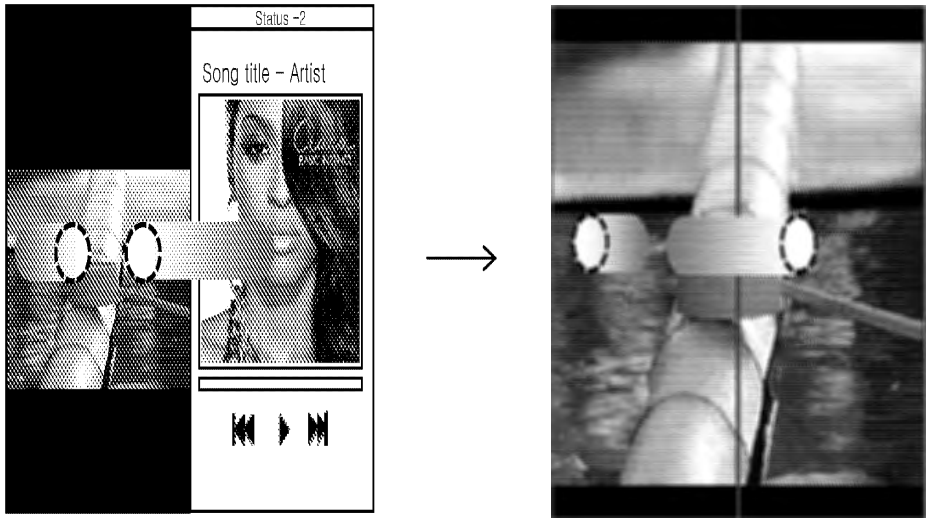


※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

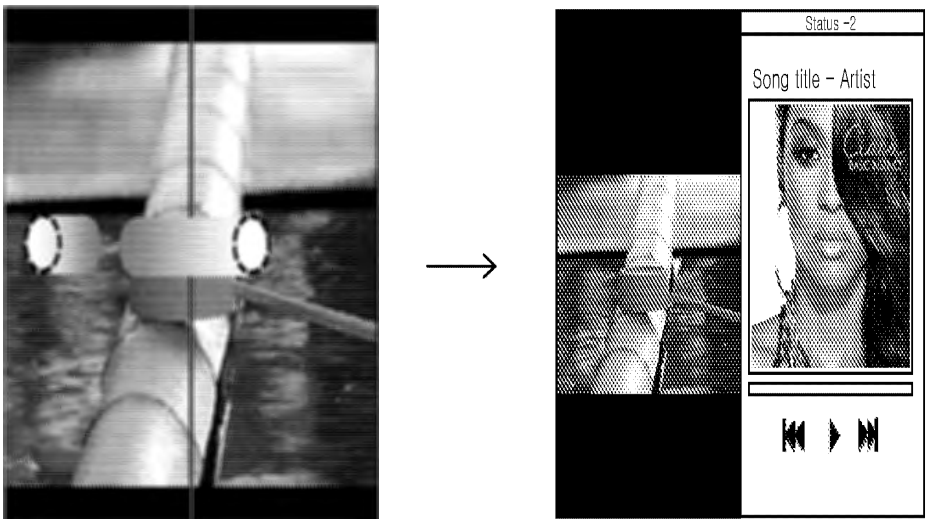
3.3 발명의 예시 - 2. Expand-mode 전환

- 한 화면을 동시에 Two Touch한 후에 하나는 Hinge 반대 방향으로 다른 하나는 Hinge를 넘어서 Drag & Drop



B' : Gallery App C : Music App B' : Fit to horizontal of two screen

- 서로 다른 화면에서 동시에 Touch 입력을 한 후에 동일한 위치로 Drag & Drop 하여 한 화면에서 Touch입력을 완료



10/22 ※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.3 발명의 기대 효과

- Dual Display Mobile 제품을 사용하면서 화면을 전환하는데 있어서 가질 수 있는 불편함을 직관적 Gesture를 활용하여 해결할 수 있음
- Hinge를 거치는 입력을 활용하여 보다 다양한 Interaction을 할 수 있다.

3.5 발명의 응용분야

- Dual Display를 사용할 수 있는 Device

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

4. 권리청구범위(Claims)

1. 여러 개의 View-mode를 제공할 수 있는 Dual Touch Screen에서 Two Screen Touch Gesture를 활용하여 View-mode 전환 및 특수한 입력을 할 수 있는 방법
2. Two screen touch gesture 를 판단하기 위하여 Gesture의 연결성을 판단하는 방법
3. 3가지의 서로 다른 View mode를 제공하고 View mode간 전환을 Two Screen Touch Gesture로 할 수 있도록 하는 방법

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

직무발명(고안)서 (Invention Disclosure Form)

<table>
<tr><td colspan="2">발명의 명칭(Title of Invention)
*발명(고안)의 내용을 표현할 수 있는 명칭을 간단 명료하게 기재</td><td colspan="3"></td></tr>
<tr><td colspan="5">Mobile Device의 Hinge Interaction 방법</td></tr>
<tr><td colspan="2">관련기술 및 선출원</td><td colspan="3">*주1) 본 발명과 관련이 있는 공개자료(특허,논문,제품,규격서,사용설명서,인터넷자료 등)
*주2) 본 발명관 관련이 있는 발명자의 기 출원완료(출원번호) 및 출원 준비중(접수번호)</td></tr>
<tr><td rowspan="5">기술 출처
*해당부분 선택기재</td><td>등록/공개 특허 *주1)</td><td colspan="3"></td></tr>
<tr><td>관련문헌 또는제품 *주1)</td><td colspan="3"></td></tr>
<tr><td rowspan="4">본발명과 관련된 발명자의 선출원 *주2)</td><td rowspan="2">既 출원 완 료</td><td>발명의명칭</td><td></td></tr>
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<tr><td>접수번호</td><td></td></tr>
<tr><td colspan="2">관련 과제명</td><td colspan="3">Dual Display</td></tr>
<tr><td colspan="2">본 발명 적용가능 제품</td><td colspan="3">Mobile Device 外</td></tr>
<tr><td colspan="2">발명자 연락처</td><td colspan="3">[전화번호] Office(필수): 031-301-9399 Cell Phone(선택): 010-7207-0071
[E-mail Account] : ka1007.kang@samsung.com</td></tr>
</table>

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

1. 본 발명의 목적(배경)

아이디어의 기술분야 및 해당 Trend

- 분야 : Device의 입력방식 및 Display 방식 外
- Trend

1. Full Touch Smart Phone의 확산으로 차세대 Display 기술 선점을 위한 경쟁이 치열함.
2. 두 개의 Screen이라는 기구적 특징을 이용해 UI가 변경되는 방식에 관한 새로운 컨셉들이 나오고 있음.
3. Hinge를 이용한 새로운 방식의 interaction에 관한 needs가 있음.

목적

- 목　적 : 두 개의 스크린이 기구적으로 접고 펴지는(Hinge를 통해) 단말기에서,
  힌지를 접고 펴는 동작과 Touch Screen을 활용한 새로운 입력방법을 제공한다.

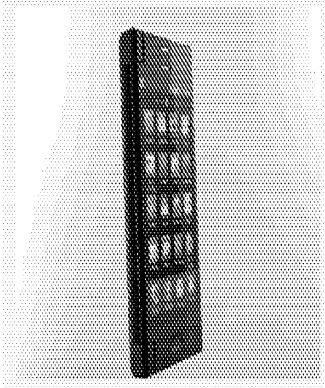
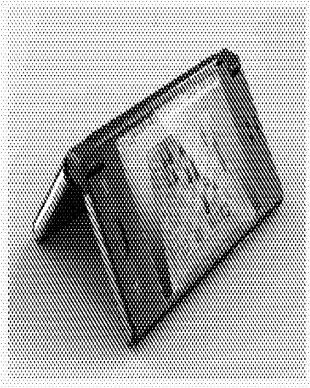
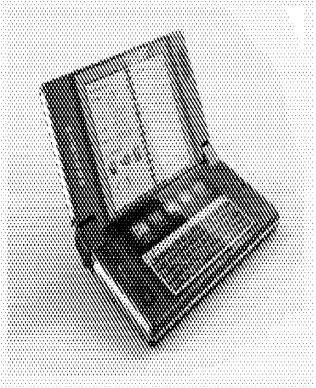
※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

2. 관련 기술 설명

2.1 차세대 Device

Dual-Display Device

두 개의 Display를 활용하여 보다 다양한 사용 경험을 제공할 수 있는 Device
두 개의 화면을 접는 각도에 따라 Mode를 변환해가며 활용 가능.

Single Screen | 0°	Out-Folded Screen | 60°	Double Screen | 180°	In-Folded Screen | 210°
			
양 스크린이 바깥쪽을 향하도록 하여 완전히 겹쳐진 상태.	양 스크린이 바깥쪽을 향하도록 하여 60도로 접혀진 상태. 바닥에 삼각형 모양으로 세워 놓을 수 있음.	양 스크린이 편평하게 펴져서 마치 하나의 큰 스크린이 된듯한 상태.	양 스크린이 안쪽을 향하도록 하여 210도로 접혀진 상태. 노트북이나 이북과 유사한 형태를 제공.

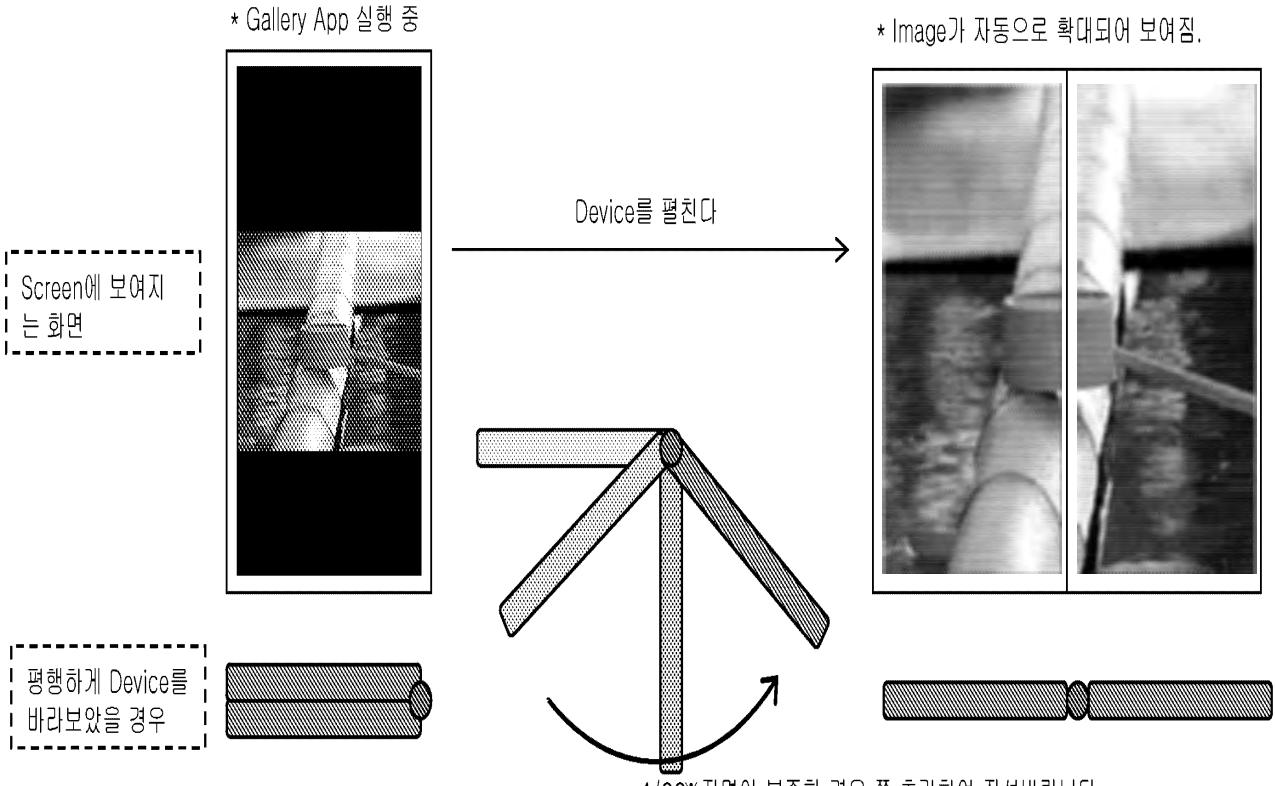
※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.1 발명의 개요

- 구 성 : 두 개의 스크린이 Hinge로 이어져 접고펴는 동작이 가능한 디바이스
- 동작 개요 :
  - 듀얼 스크린의 힌지가 접히고 펴지는 동작을 하나의 Hinge-Input으로 인식.
  - 듀얼 스크린의 힌지가 접혔다가 유효시간 내에 제자리로 돌아올 경우 Folding&Back Input으로 인식. (이후 **F&B Input**으로 명명)
  - 듀얼 스크린의 힌지가 접힌 상태가 유효시간이상 유지되는 경우 Folding&Holding Input으로 인식.(이후 **F&H Input**으로 명명)
  - F&H Input과 스크린의 Touch 입력이 동시에 입력되었을 경우도 하나의 새로운 Input으로 인식.
  - **1)힌지가 접힌 각도, 2)접힌 상태의 유지여부, 3)움직인 스크린의 위치 , 4)Touch입력의 유무**를 파악하여 동작을 구분.

• 접힌 상태의 한 화면으로 App을 실행하다가 Device를 180°, 즉 평면으로 펼치면 변화된 힌지 각도를 인식하여 자동으로 화면이 확대되어 전환되는 사례



4/22※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.2 발명의 구성 : 입력된 Input의 구분 방법

-Hinge의 각도변화를 인식하기 위해 육측센서 등의 motion sensor 장치가 필요하다.

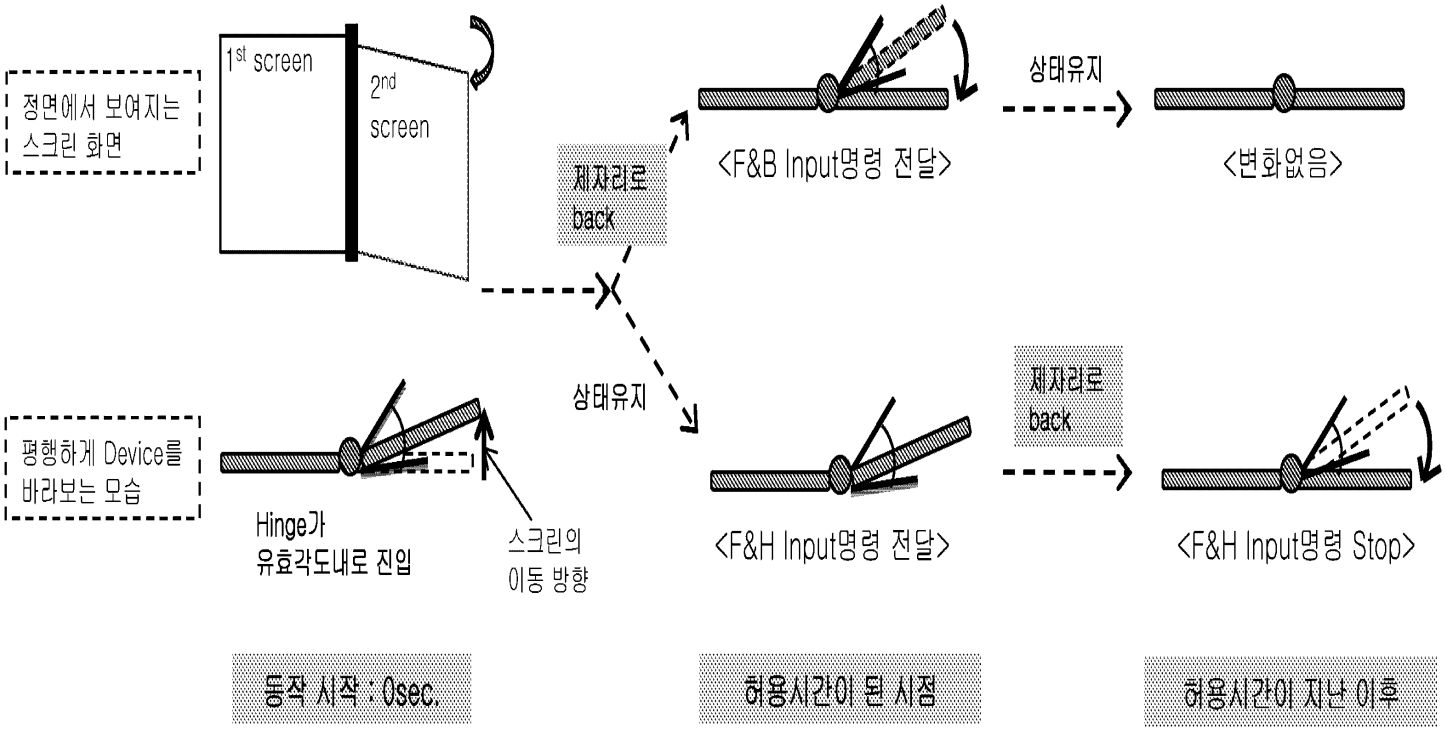
-입력된 Input을 구분하는 기준은 3가지가 있다.

1. 시간을 통한 구분

a) 유효시간 내에 이루어진 동작으로 Input명령으로 인식함.

b) F&H Input의 경우 유효시간 동안 계속 holding상태가 지속되어야 하며,

holding이 유지되는 시간동안은 계속 input이 전달되고 있는것.



※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.2 발명의 구성 : 입력된 Input의 구분 방법

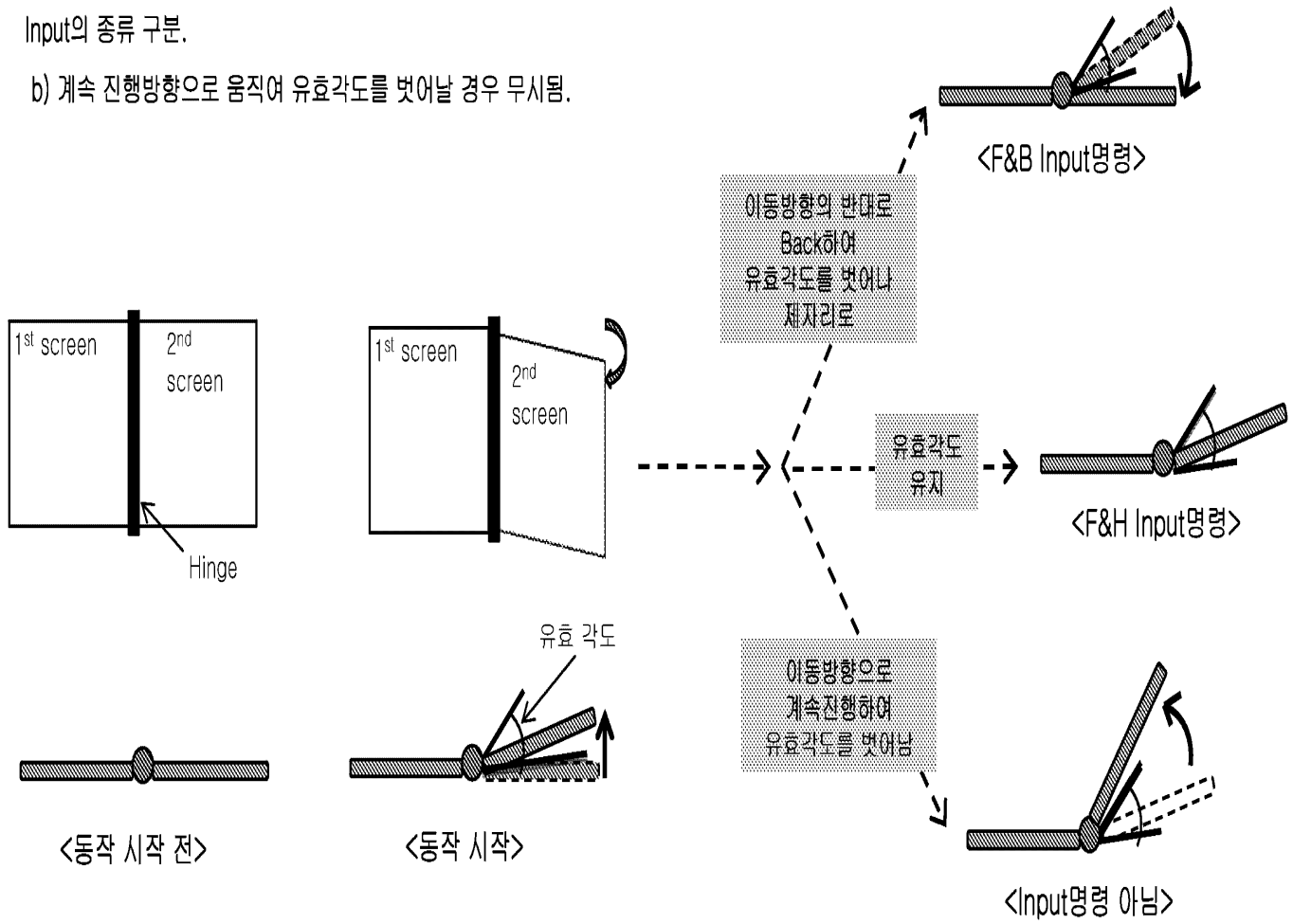
2. 각도를 통한 구분

a) Hinge의 각도가 유효위치로 들어온 이후에

유효각도를 벗어나 다시 제자리로 돌아오는가, 혹은 유효각도 내에서 유지되는가에 따라

Input의 종류 구분.

b) 계속 진행방향으로 움직여 유효각도를 벗어날 경우 무시됨.



6/22 ※ 지면이 부족한 경우 쪽 추가하여 작성바랍니다.

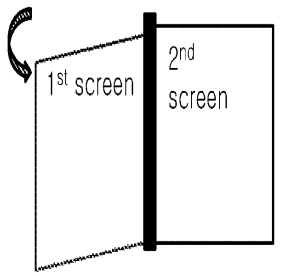
3. 발명의 설명

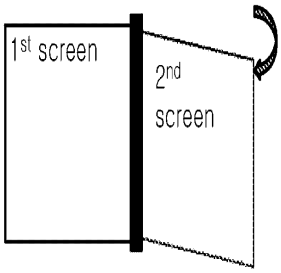
3.2 발명의 구성 : 입력된 Input의 구분 방법

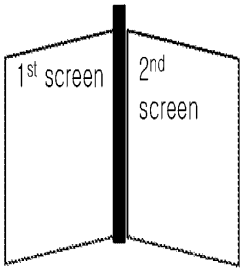
3. 움직인 스크린의 위치를 통한 구분

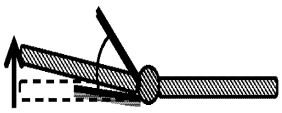
a) 어느 쪽 스크린으로 Hinge의 각도가 변했는지를 구분하여 다른 Input명령으로 mapping 가능

b) 왼쪽 스크린(1st screen), 왼쪽 스크린2nd screen), 양쪽스크린의 세가지 종류를 둘 수 있음

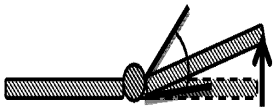








왼쪽 스크린의 각도가
유효각도내로 진입



오른쪽 스크린의 각도가
유효각도내로 진입



양쪽 스크린의 각도가
유효각도내로 진입

왼쪽 스크린으로 Input

오른쪽 스크린으로 Input

양쪽 스크린으로 동시에 Input

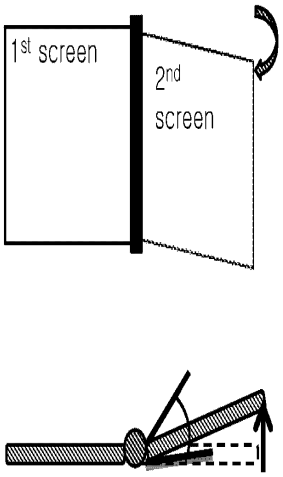
※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

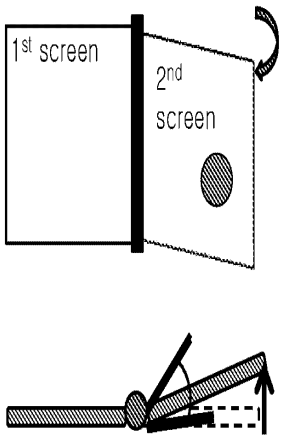
3.2 발명의 구성 : 입력된 Input의 구분 방법

4. F&H 동작 중에 Touch input이 함께 들어오는가의 여부

   a) 이 경우 새로운 input 명령으로 구분 가능.



F&H Input



오른쪽 스크린의 각도가
유효각도내로 진입

F&H Input + Touch Input

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.2 발명의 구성 : 활용할 수 있는 9가지 Interaction과 mapping 예시

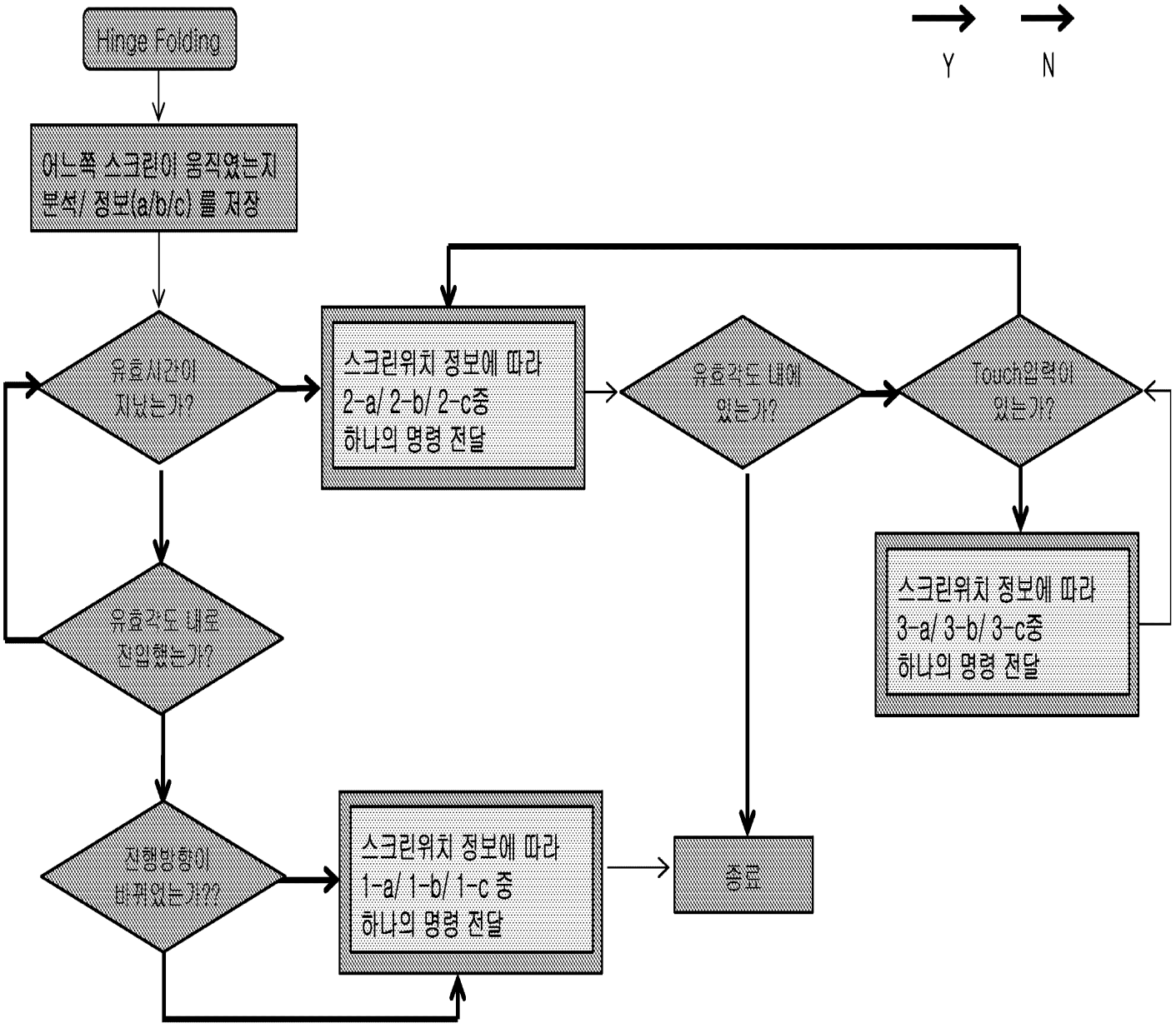
스크린의 움직임 / Input 종류	Folding & Back Input	Folding & Holding Input	Folding & Holding Input + Touch Input
왼쪽 스크린의 움직임	1-a Task-Manager 호출	2-a 실행중인 멀티타스킹 중 이전Task로 변경	3-a E-book의 챕터 전환
오른쪽 스크린의 움직임	1-b Clipboard 호출	2-b E-book에서 책장이 넘어가는 Effect	3-b E-book의 Detail한 Page 설정
양쪽 스크린의 다른 움직임	1-c 현재 화면 Capture	2-c 화면 Zoom-In/Out	3-c E-book에서 다른 책으로의 전환

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

9/22

3. 발명의 설명

3.2 발명의 구성 : Input종류를 구분하는 S/W process

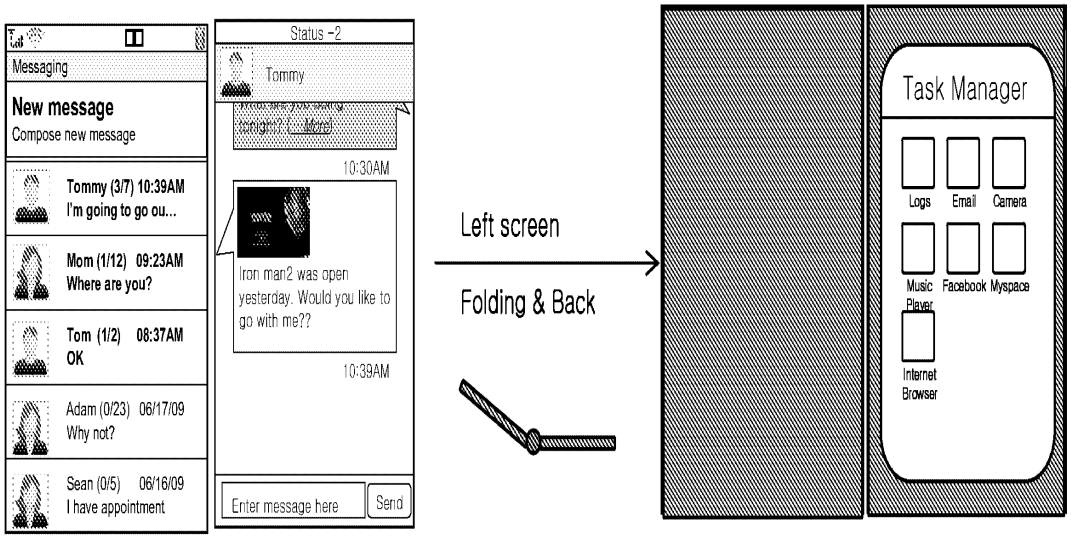


10/22 ※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

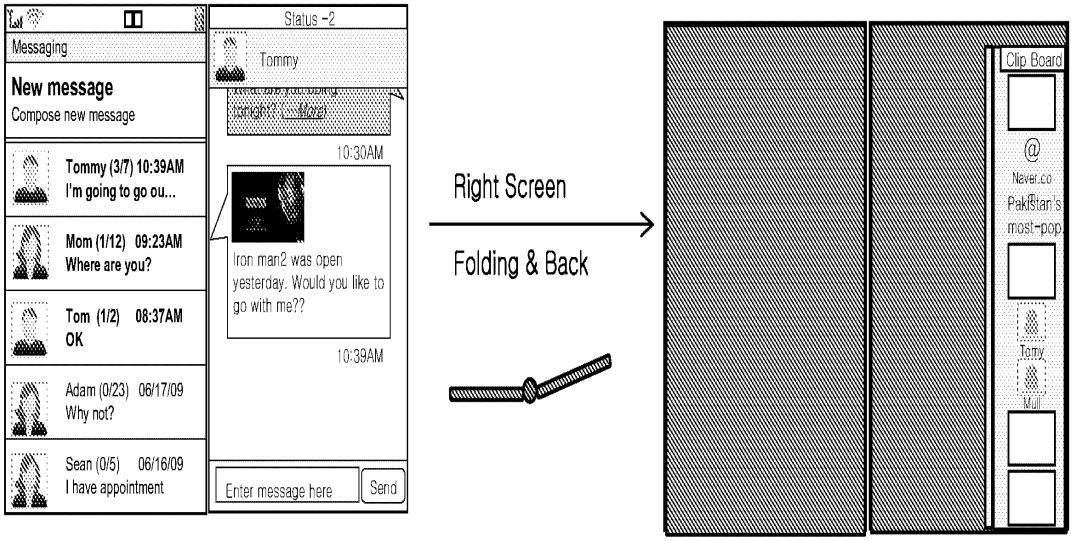
3. 발명의 설명

3.3 발명의 예시(1)

1-a) Task-Manager 호출



2-b) Clipboard 호출

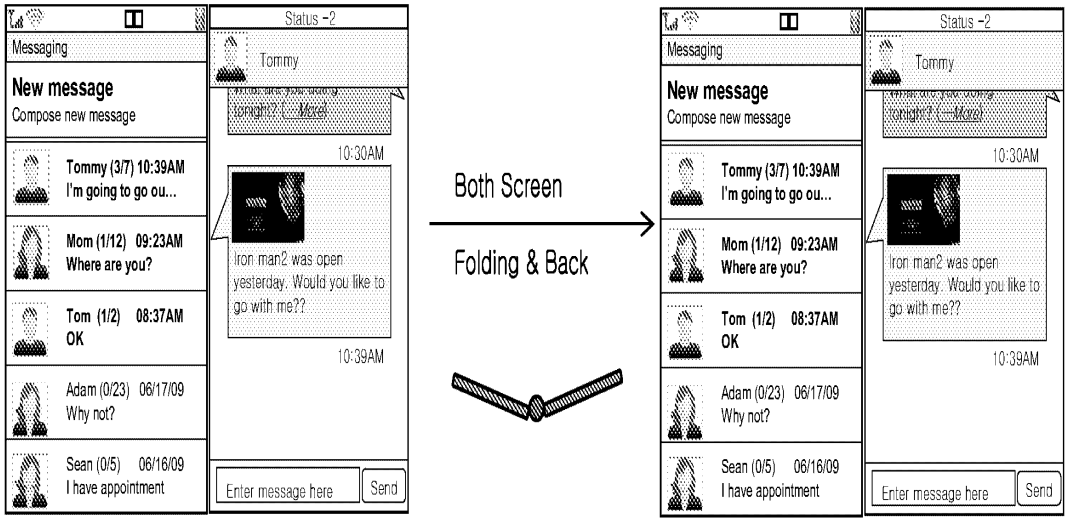


※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.3 발명의 예시(2)

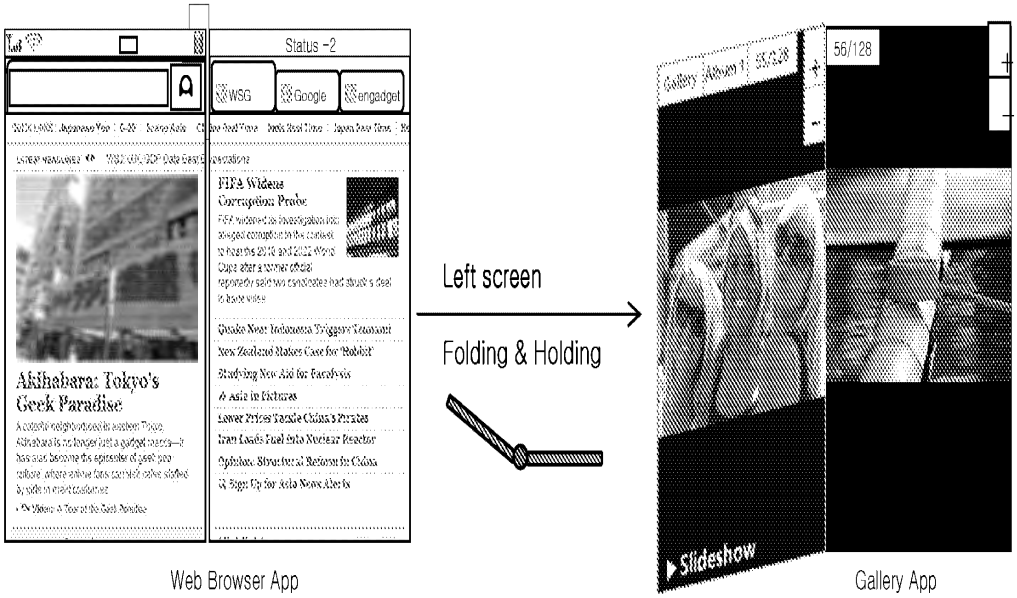
1-c) 현재화면 capture



현재 화면이 Capture되어 사진 갤러리에 Image로 저장됨.

현재 화면이 변하지는 않음.

2-a) 실행중인 멀티타스킹 중 이전Task로 변경



Web Browser App

Gallery App

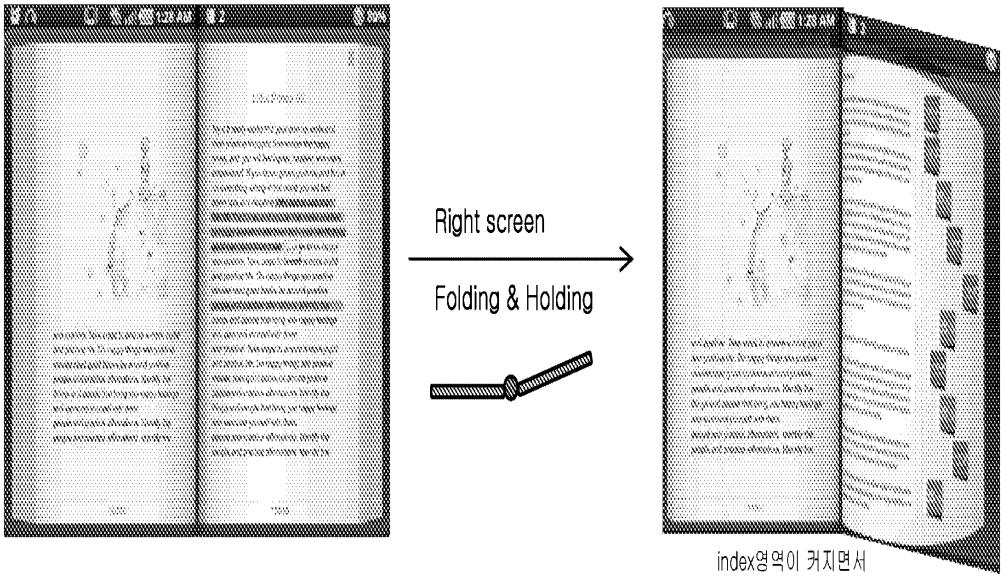
이전에 실행중이던 App 이 Gallery였으면 Task가 변경됨.

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

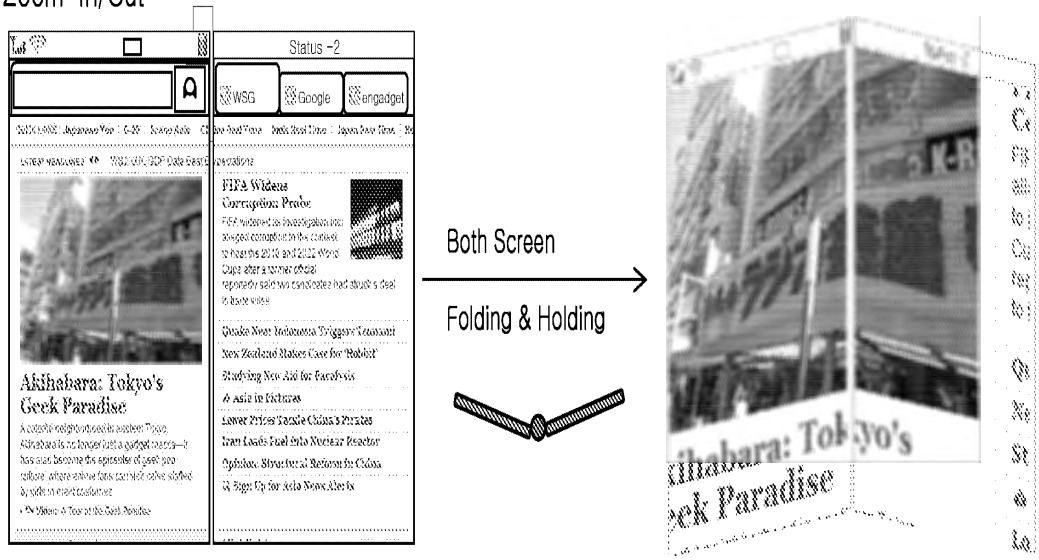
3.3 발명의 예시(3)

2-b) E-book에서 책장이 넘어가는 Effect



index영역이 커지면서
후루룩 넘어가는 Effect가 나타남

2-c) 화면 Zoom-In/Out



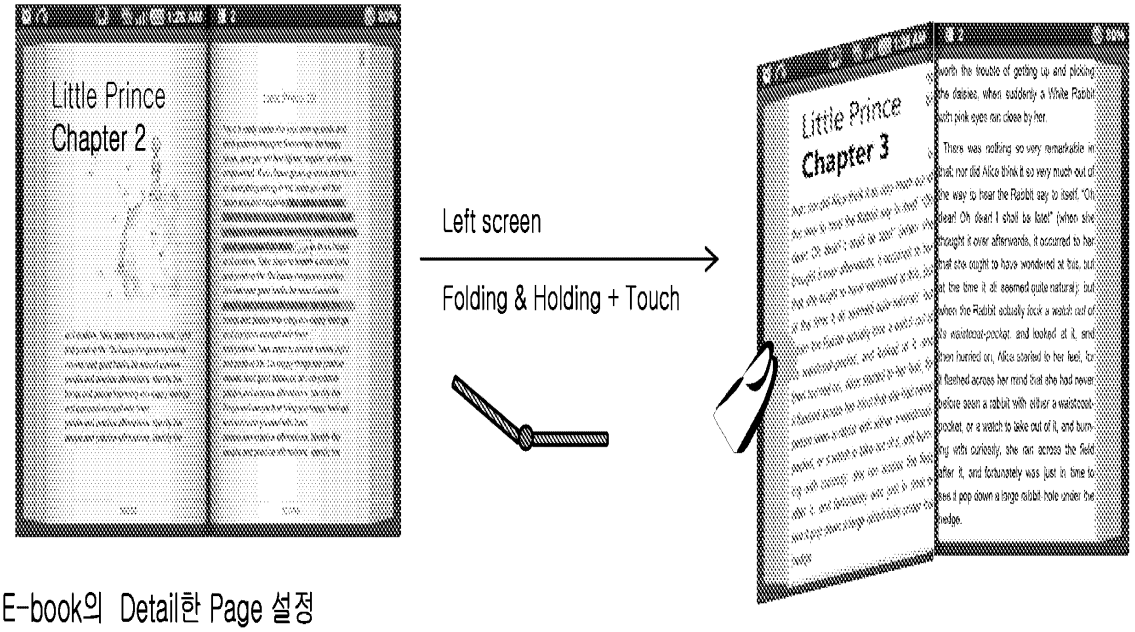
Zoom In

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

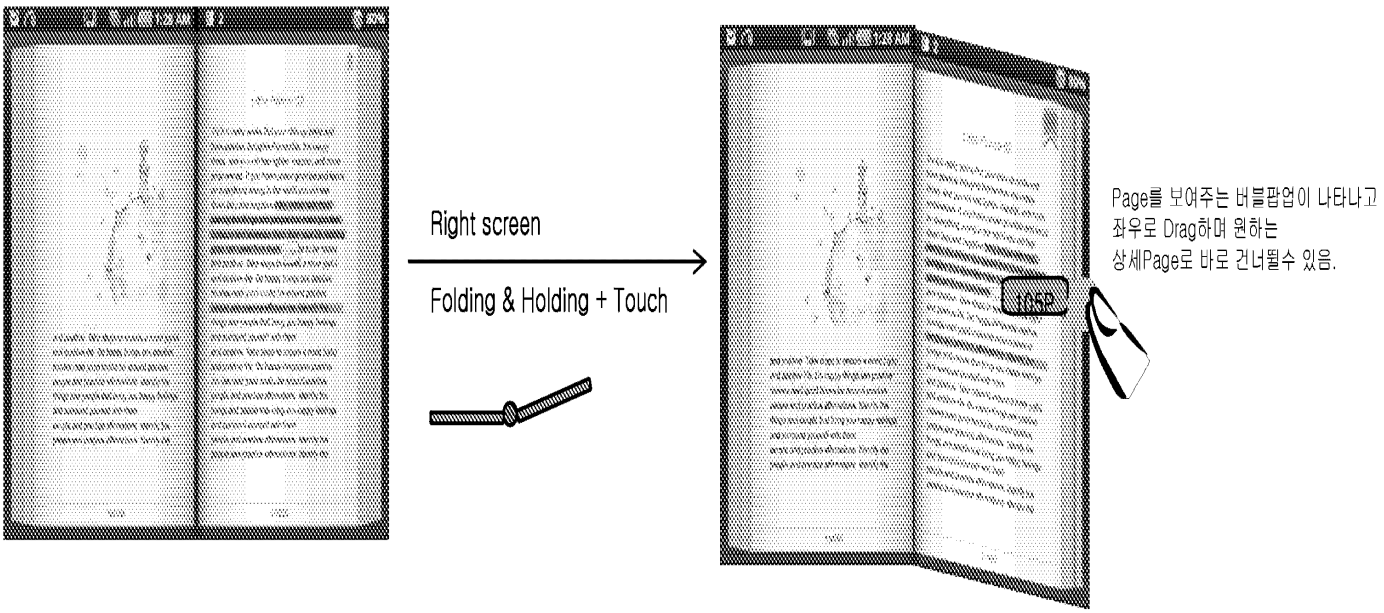
3. 발명의 설명

3.3 발명의 예시(4)

3-a) E-book의 챕터 전환



3-b) E-book의 Detail한 Page 설정

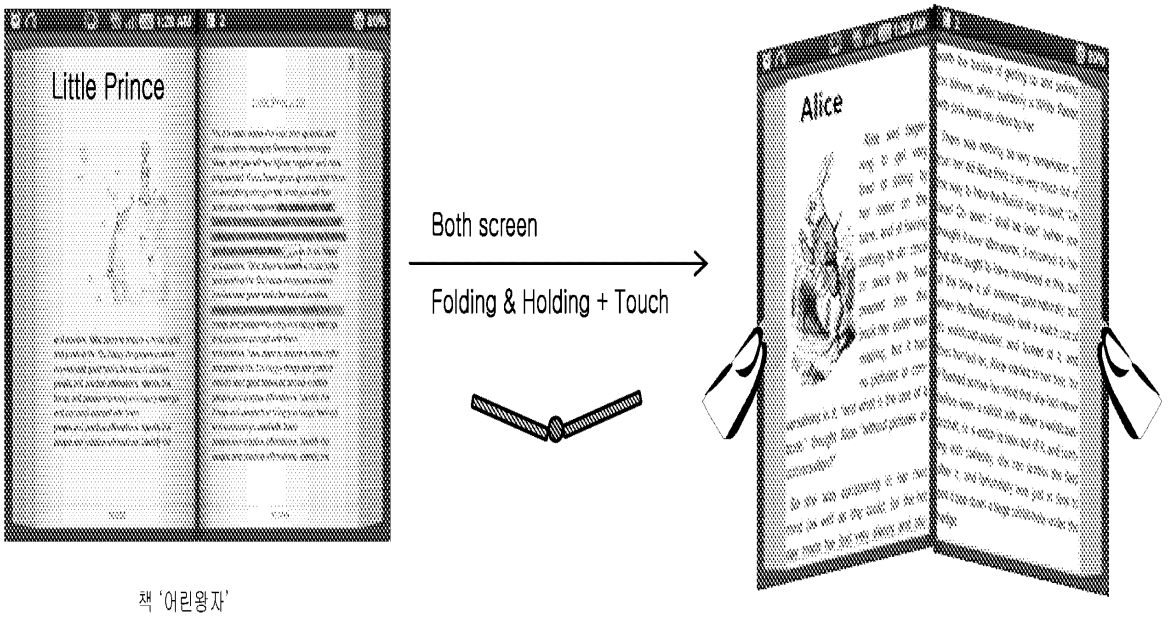


※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.3 발명의 예시(4)

3-c) E-book에서 다른책으로의 전환



책 '어린왕자'

My Book List에 있는 '다음책'으로 넘어감.
책 '앨리스'

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

3. 발명의 설명

3.3 발명의 기대 효과

- 기존의 Hard key나 Touch로만의 입력이 아닌, Hinge를 이용한 새로운 방식의 interaction을 제공한다.
- 기존 입력방법들과 함께 Hinge Input을 mix하여 할 경우, 훨씬 많은 경우의 수의 새로운 Interaction이 생긴다.

3.5 발명의 응용분야

- Hinge를 이용해 접고 펴는 동작을 할 수 있는 모든 Touch ScreenDevice
  (휴대폰, 타블렛, NotePC 등)

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

4. 권리청구범위(Claims)

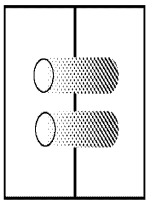
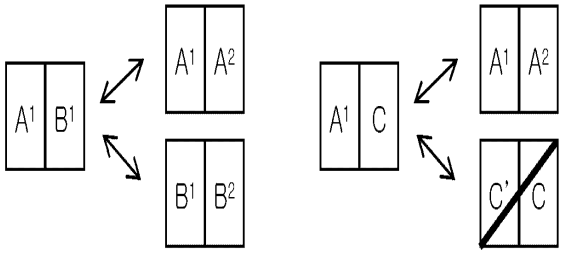
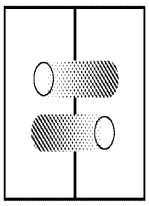
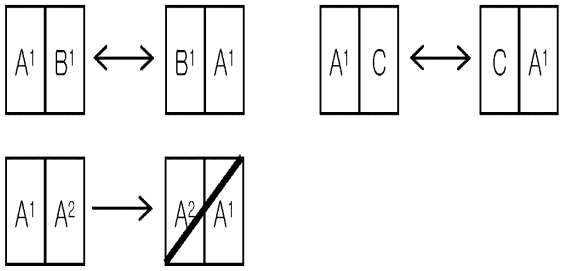
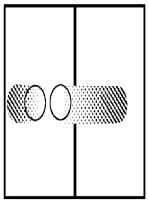
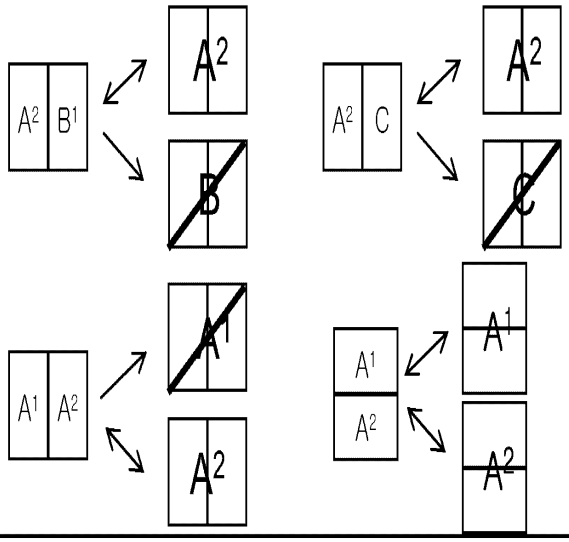
1. Dual Screen/Display Device에서 두 스크린간의 각도에 따라 인터랙션을 구분하여 수행하는 방법
2. Dual Screen/Display Device에서 두 스크린중 움직이는 스크린의 위치에 따라 인터랙션을 구분하여 수행하는 방법
3. Dual Screen/Display Device에서 두 스크린간의 각도변화와 Touch 입력을 동시에 받아 하나의 인터랙션으로 인식하는 방법

※지면이 부족한 경우 쪽 추가하여 작성바랍니다.

Basic interaction

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Two Screen Basic Rule

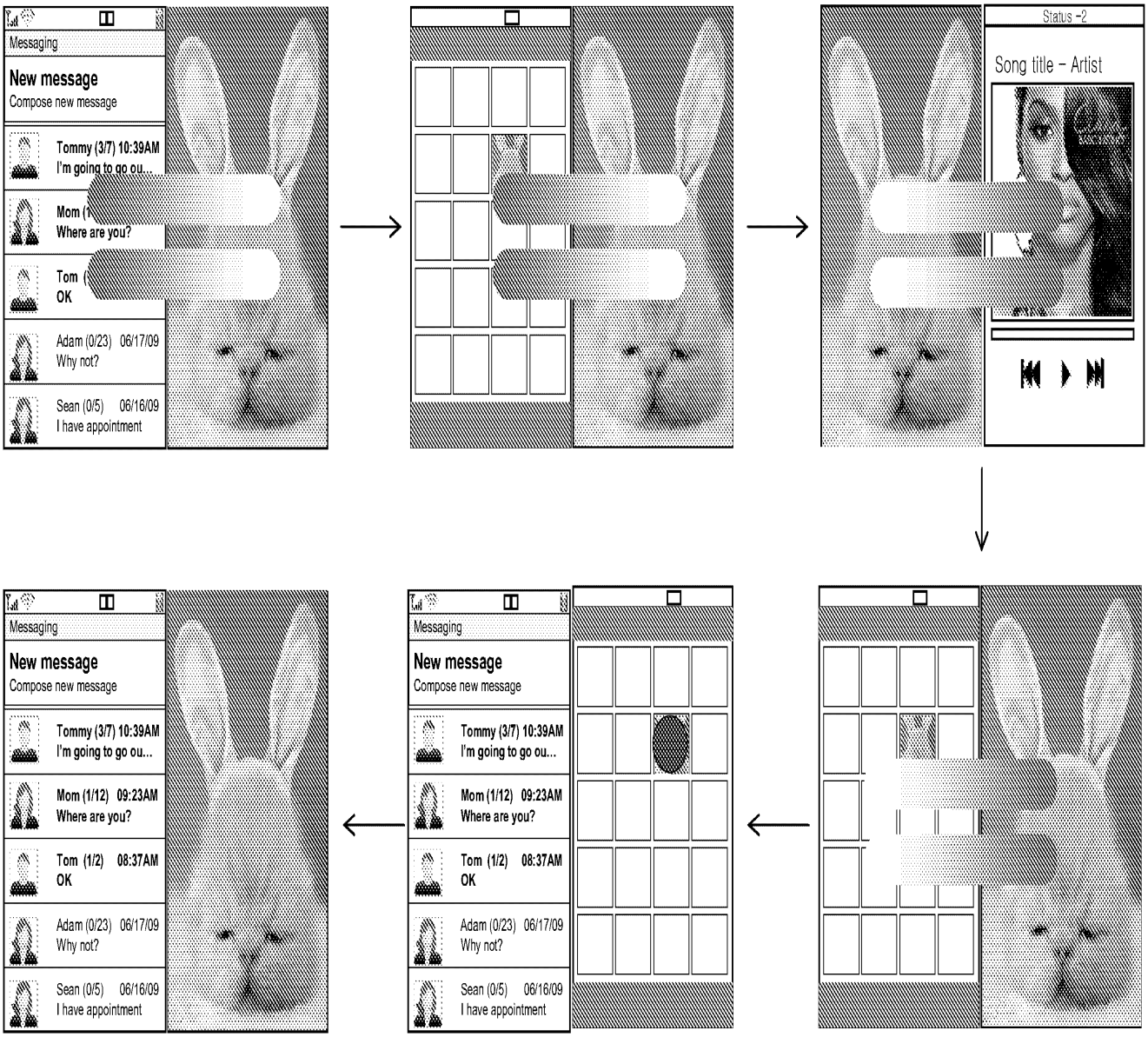
Type		Description	Use cases
One Application		Two finger touch Input in one screen and Drag to the other screen. Horizontal Mode is same rule	
Swapping		두 개의 화면에 동시에 터치한 후 각각의 터치를 반대 화면으로 Drag 시에 동작함 가로모드도 동일하게 동작함	
Full Screen		한 화면에서 두개의 터치 입력 후 하나의 터치를 다른 화면으로 Drag 시에 동작함 화면 확대와 동시에 Single Screen 에서 Full Screen으로 확대됨 Full screen에서 반대로 입력이 될 경우 이전 화면 모드로 돌아감됨 (Photo, Web Browser, Map, ...) List와 같은 경우 가로 모드일 때 Full Screen으로 확장 가능	

A : Application Support Dual Screen have Play screen
(A^1 : First Depth like Contents List, A^2 : Play Screen)
B : Application Support Dual Screen
(B^1 : First Depth like Contents Group, B^2 : First Depth like Contents List)
C : Application only Single Screen

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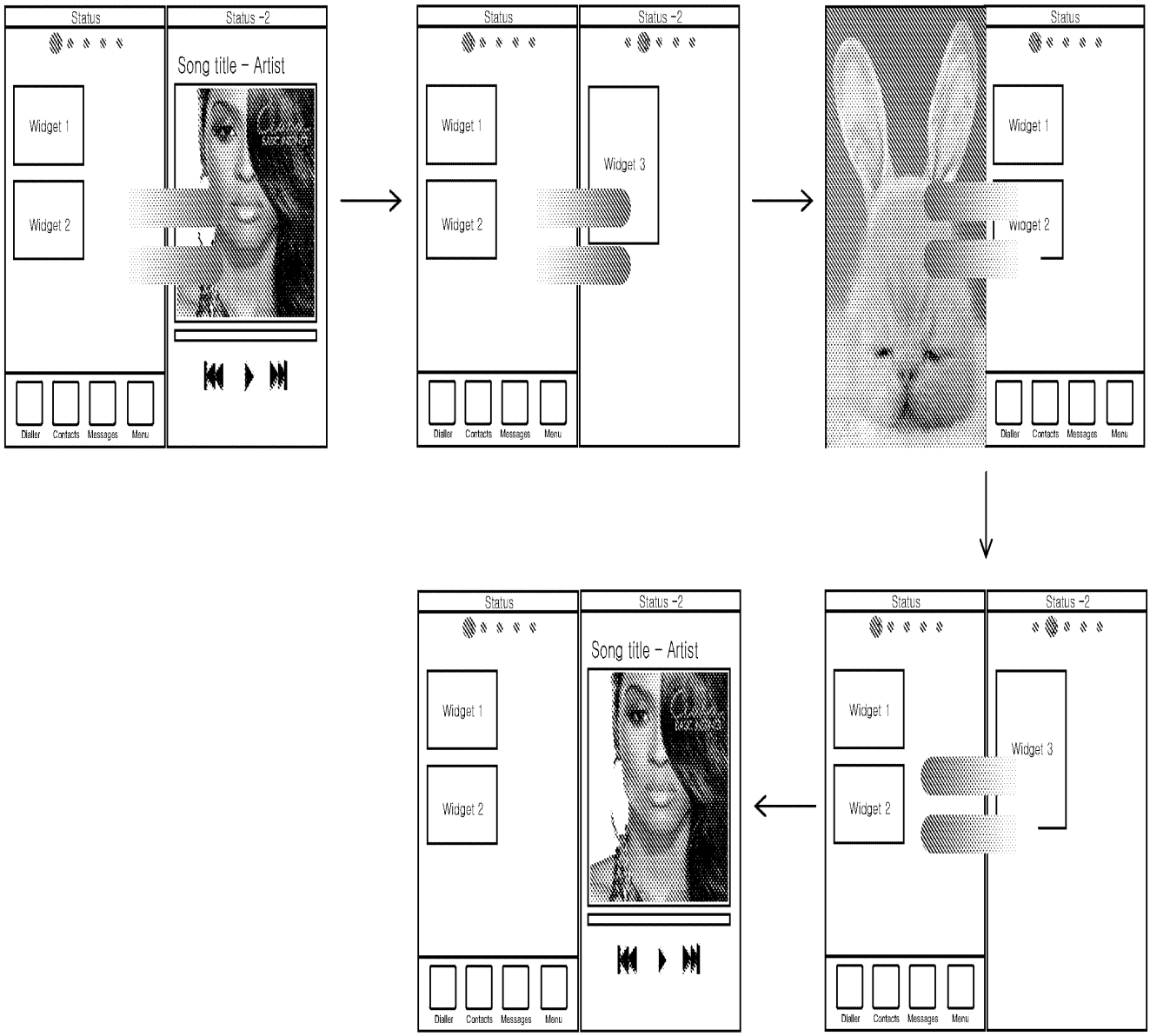
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Screen Extension



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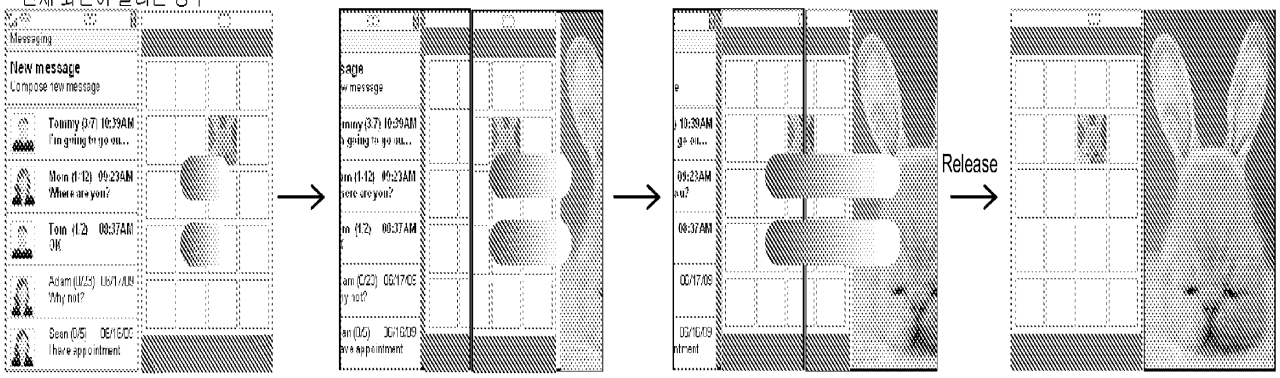
Screen Extension : Home



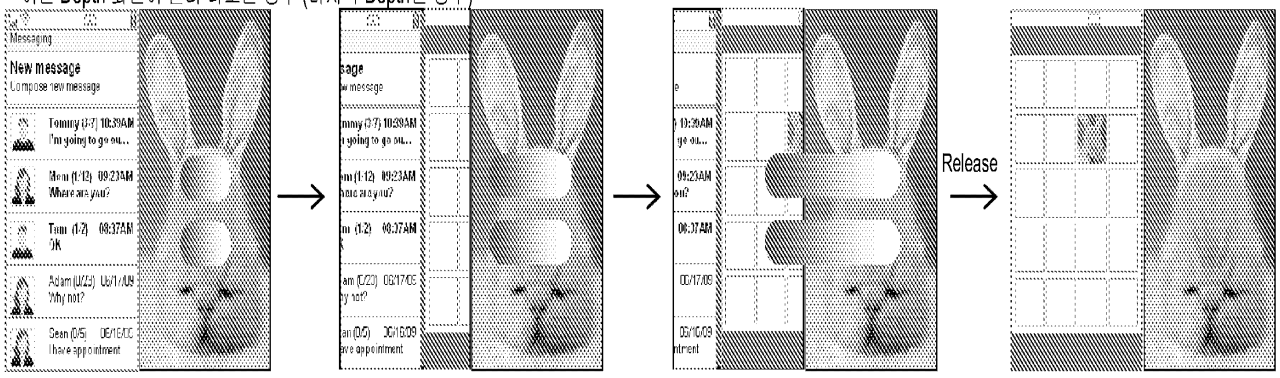
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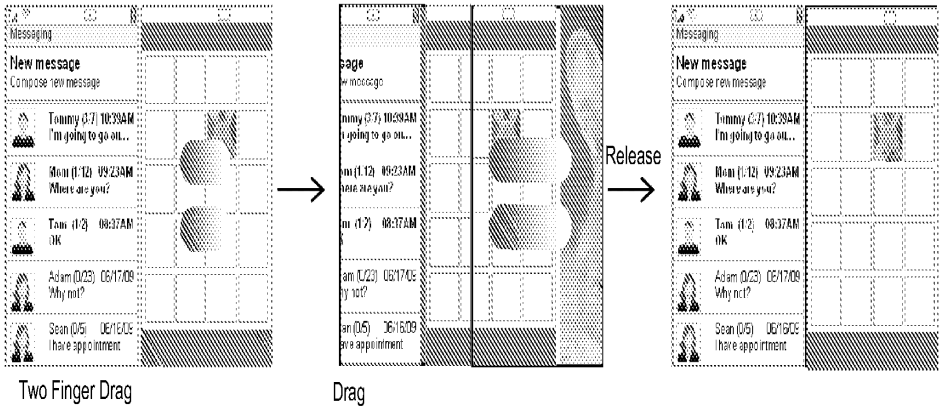
Screen Extension : Interaction Step

현재 화면이 밀리는 경우



이전 Depth 화면이 밀려 나오는 경우 (마지막 Depth인 경우)

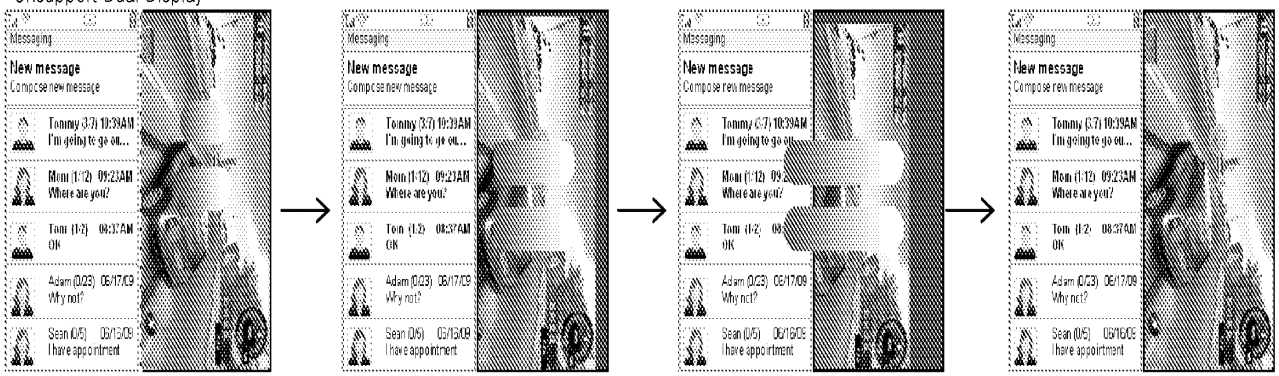




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Screen Extension : Not Supported Case

Unsupport Dual Display

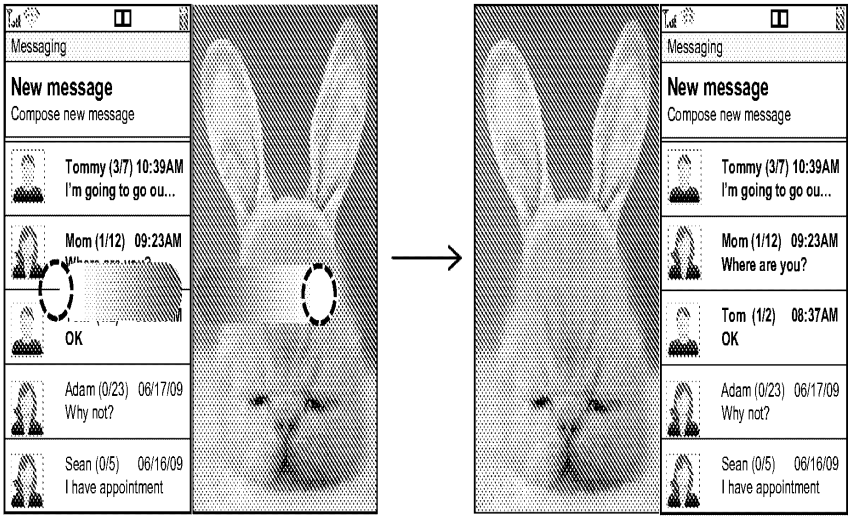


Visual Feedback : 화면이 약간 밀리다 뭉겨 나오는 효과

Drag하는 손가락이 Screen을 넘어간 순간 원래대로 돌아옴

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Screen Swapping : Basic Interaction



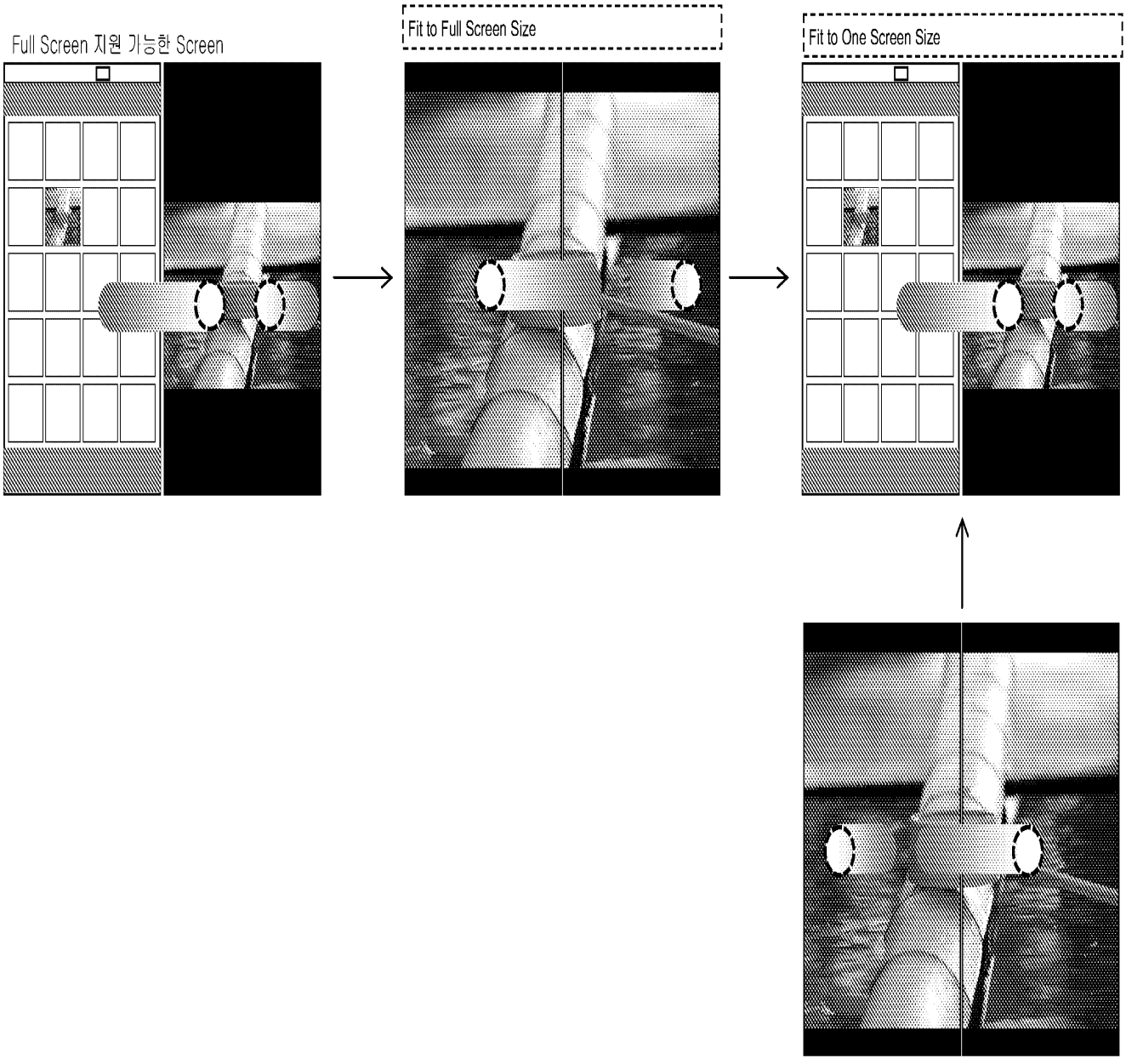
Swapping supported only Two Application Displayed

두화면에 각각 다른 어플이 표시되고 있을 때 적용
두화면에 동시에 입력 시에 기능 기동됨

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Screen Full Screen : Basic Interaction

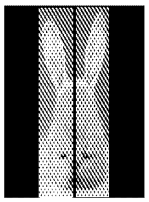


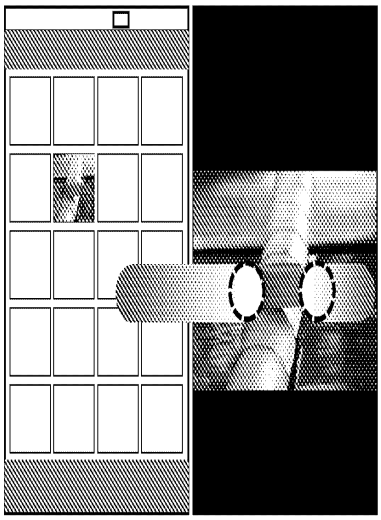
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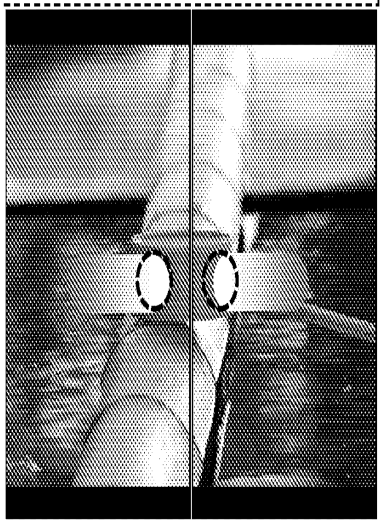
Screen Full Screen : Full Screen &

이슈사항 : Single View 세로 모드에 꽉차는 세로 이미지와 같은 경우 Full Screen View로 전환 시에 Single view 이미지가 화면 중앙에 걸치게 된다.

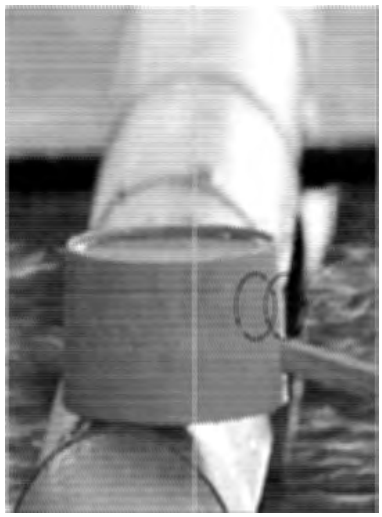




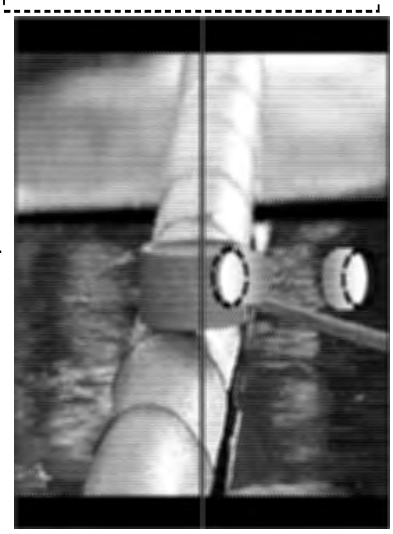
Fit to Full Screen Size



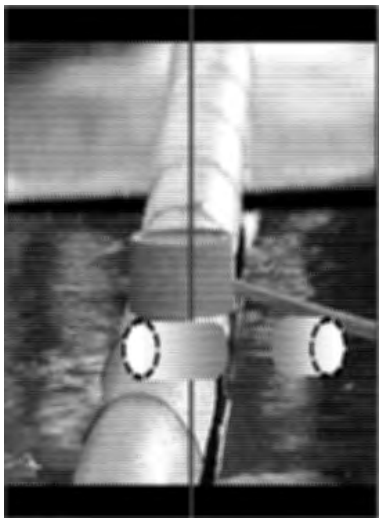
이미지의 전체가 화면에 표시된다.



Fit to Full Screen Size

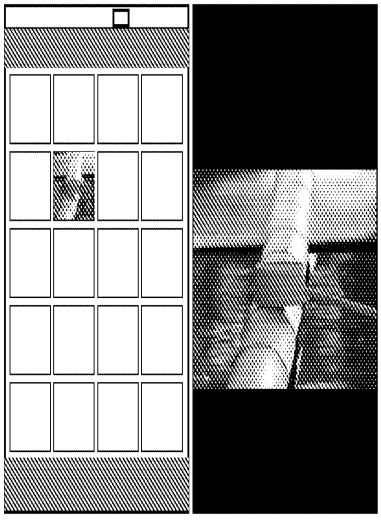


Fit to full screen 상태에서 Zoom out 해도 더 이상 줄지 않는다.



Full Screen Mode에서 Expansion Mode로 전환은 Full Screen에 Fitting 된 이후에 진행됨

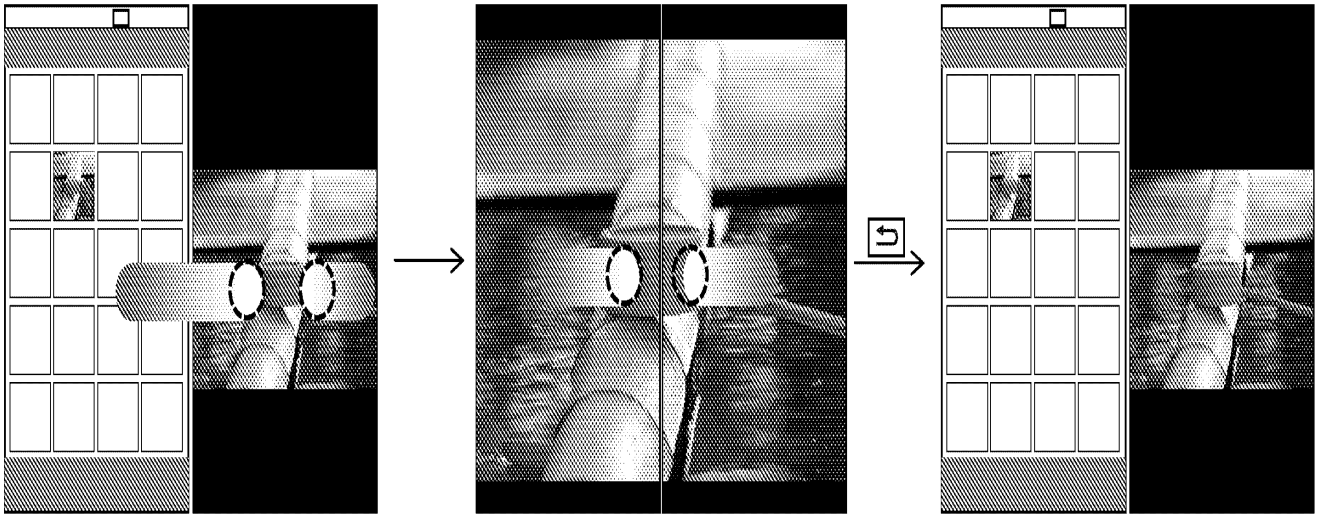
Fit to Single Screen Size



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Screen Full Screen : Full Screen & Zooming



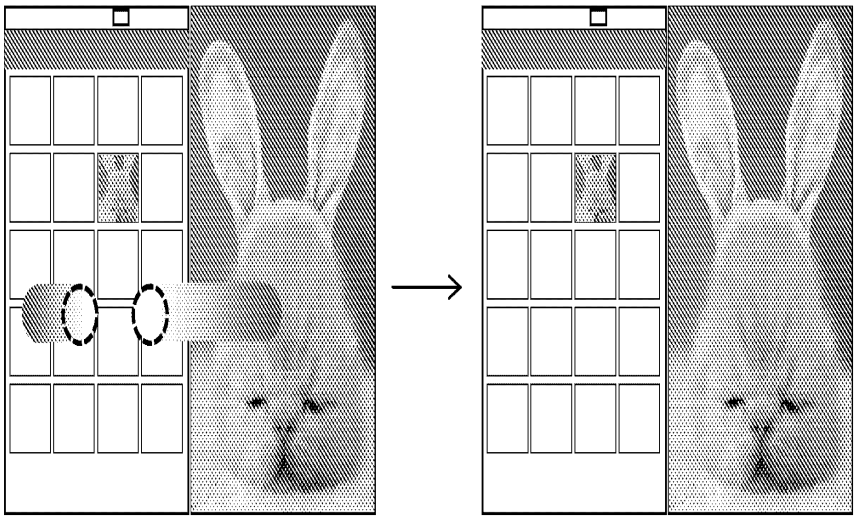
이미지의 전체가 화면에 표시된다.

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Screen Full Screen : Application

Full Screen 지원 불가능한 Screen

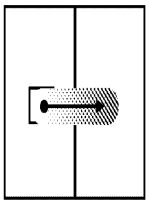
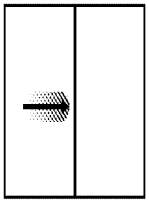


양쪽 터치 입력의 위치가 바뀌지 않으면 Swapping 되지 않는다.

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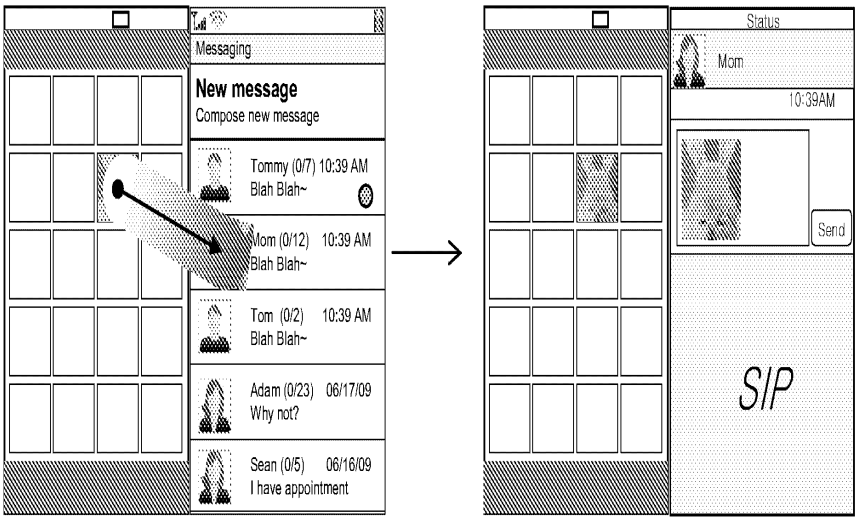
Multitasking Contents Move

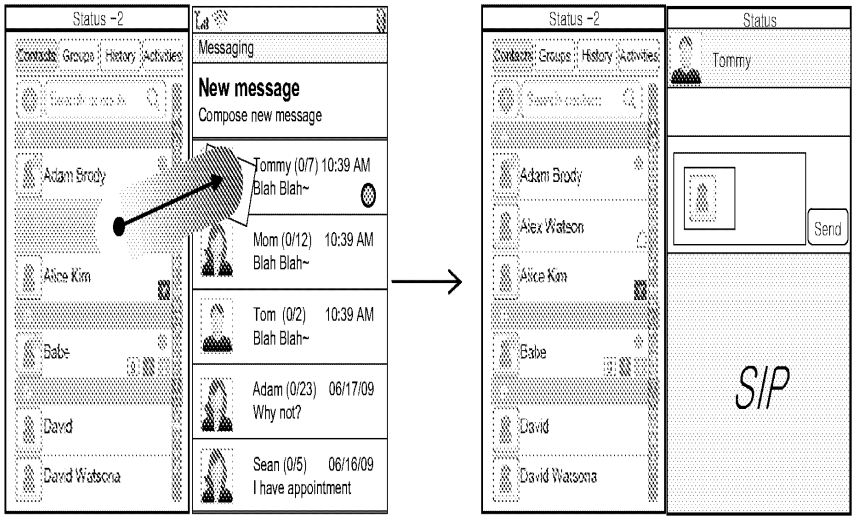
Type		Description	Use cases
Object Drag & Drop		Object를 선택한 상태에서 Drag 해서 다른 화면으로 이동하는 동작	
Object Select & Flick		Object를 선택한 상태에서 Flick 하는 동작	

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Contents Drag & Drop

Contents를 실행할 대상을 선택해서 Move 하는 경우 Drag & Drop을 사용한다.
단 이 경우 Select & Flick은 동작하지 않는다.

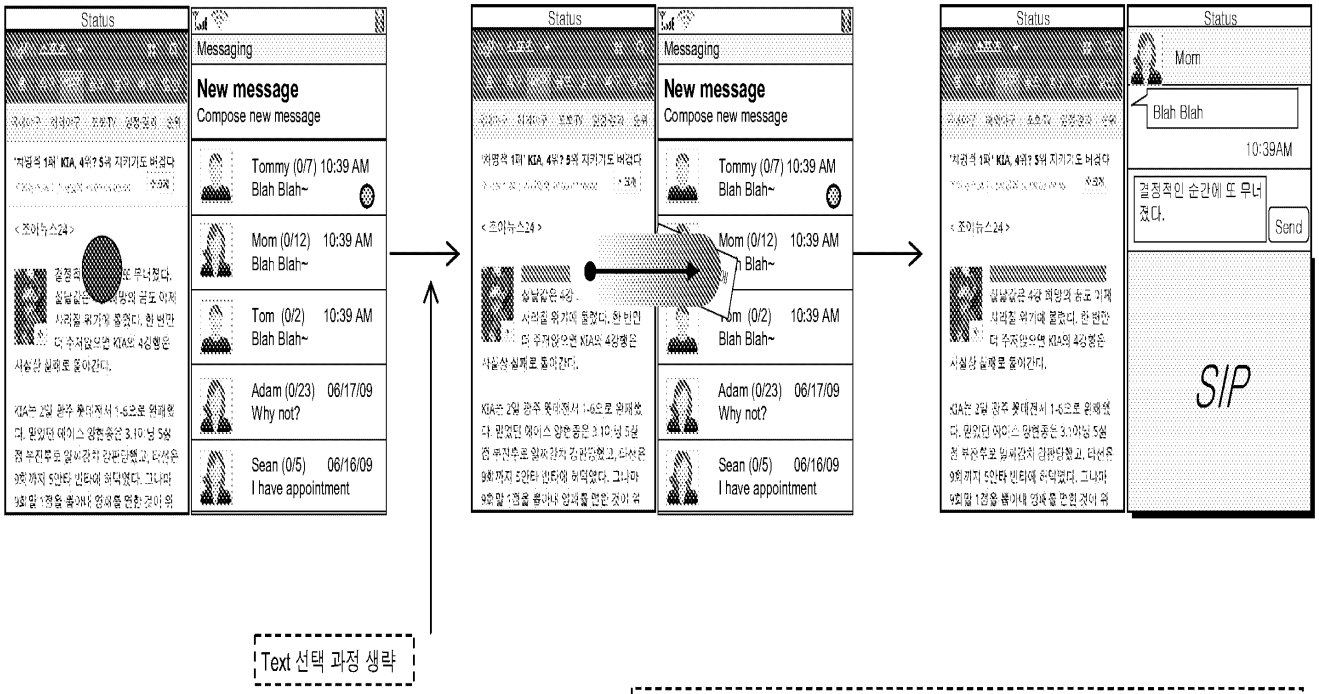




Gallery, Web, Callendar, Contacts, Message, Memo
Text, Thumbnail (Contact, Photo, Movie)

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Contents Drag & Drop



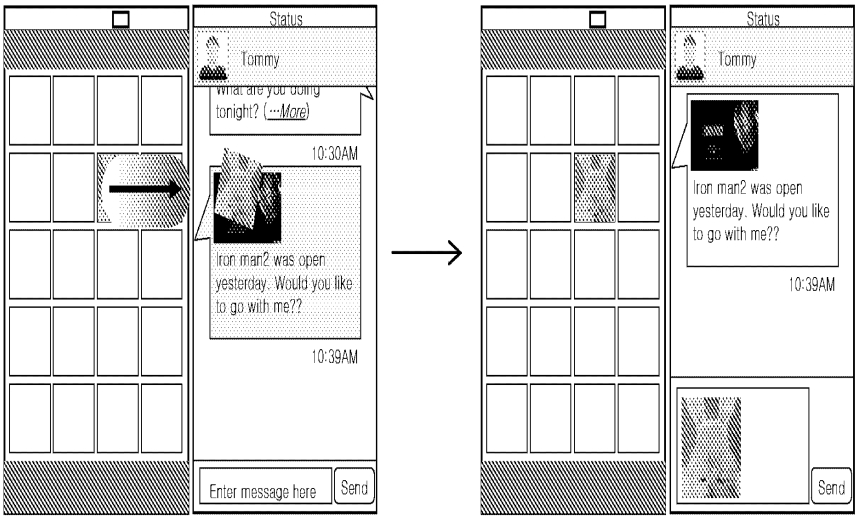
Gallery, Web, Callendar, Contacts, Message, Memo
Text, Thumbnail (Contact, Photo, Movie)

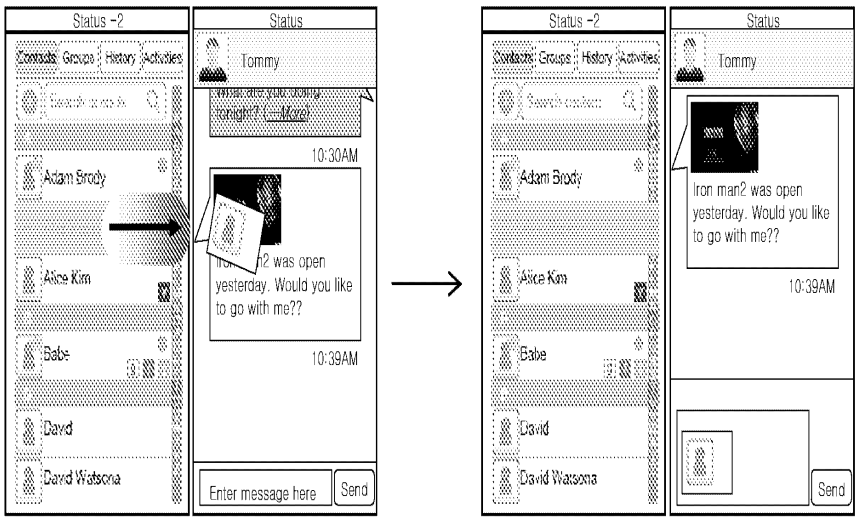
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Contents Select & Flick

Contents를 실행할 대상이 이미 정해진 경우 Select & Flick을 사용한다.
단, 이 경우 Drag & Drop도 동일하게 Flick과 동일하게 동작한다.





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Text, Thumbnail (Contact, Photo, Movie)

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Dual Display Calendar UI Guideline
for Android

V.1.0

December 27, 2010

Contact Point :
Hyunjin Kim (truthkim@samsung.com) +82-10-8908-4559
Joonkyu Seo (joonkyu.seo@samsung.com) +82-10-2431-1289
Juyoun Lee (florial.lee@samsung.com) +82-10-4339-0026
Hyunjeong Song (songah.song@samsung.com) +82-2-2255-5563
Dongseok Ryu (dongseok.ryu@samsung.com) +82-2-2255-5424

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Document History

No.	Sent	Version	File Name	Contents
01	December 27, 2010	v.1.0	[Duplex_Android] Calendar_v.1.0_20101227	Document Origination

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Notation Guide

Comments Style

Principle Blahblahblahblah	Spec Blahblahblahblah	Blahblahblahblah	Comment Blahblahblahblah
A definition of UI principle. Definition of comments that can be fundamental and exceptional conditions, Including the definition about the vocabulary.	Spec Description	Description for situation change in scenario and condition & Default Value	Samsung UX Team Comment

Line Style

Primary Flow	Secondary Flow	Defining functions

Flow Iconography

	
Decision Point	End Flow: Idle Screen

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Document Flag

Document Flag		
v.xx Added BlahblahblahBlahblahblah	v.xx Updated BlahblahblahBlahblahblah	v.xx Added BlahblahblahBlahblahblah / v.xx Updated BlahblahblahBlahblahblah
Added page	Updated page	Keep Previous History

Document Flag		
TBD	v.xx Deleted : Blahblahblah	See Android Guideline
TBD functions	Deleted functions	The rule is same with the single android phone.

Document Flag	
Workflows	Workflows
AT&T MAXD UE flows	Samsung UE flows

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Contents

1. Key screen
1.1 - Start Screen
1.2 - Portrait
1.3 - Landscape
1.4 - Dual Zoom Screen

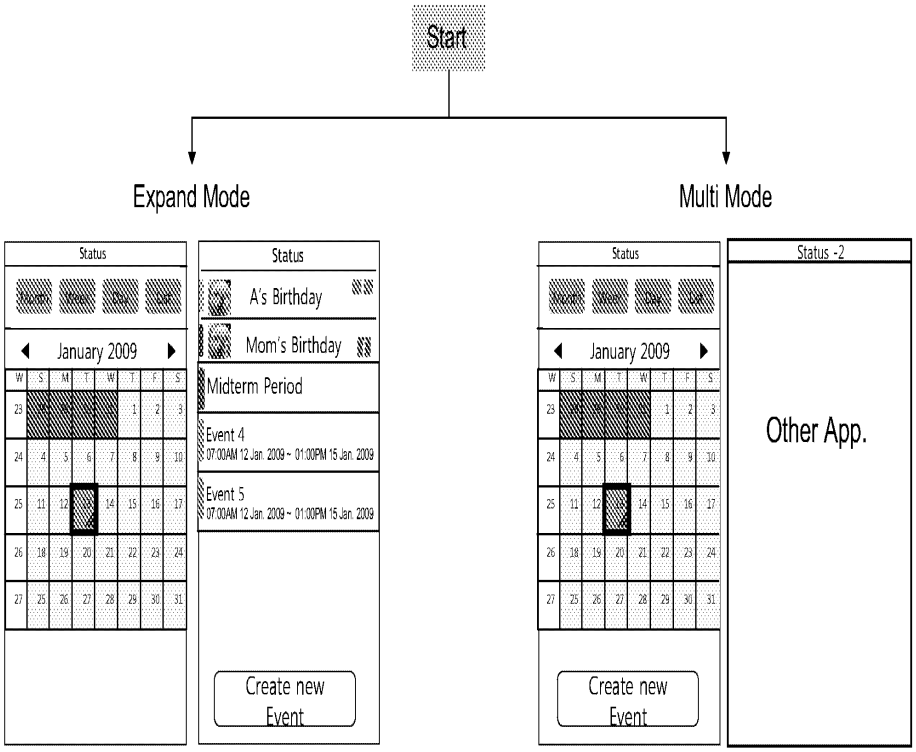
2. Scenario
2.1 calendar navigation
2.2 create new event
2.3 Menu>Delete
2.4 Dual zoom

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1. Key Screen

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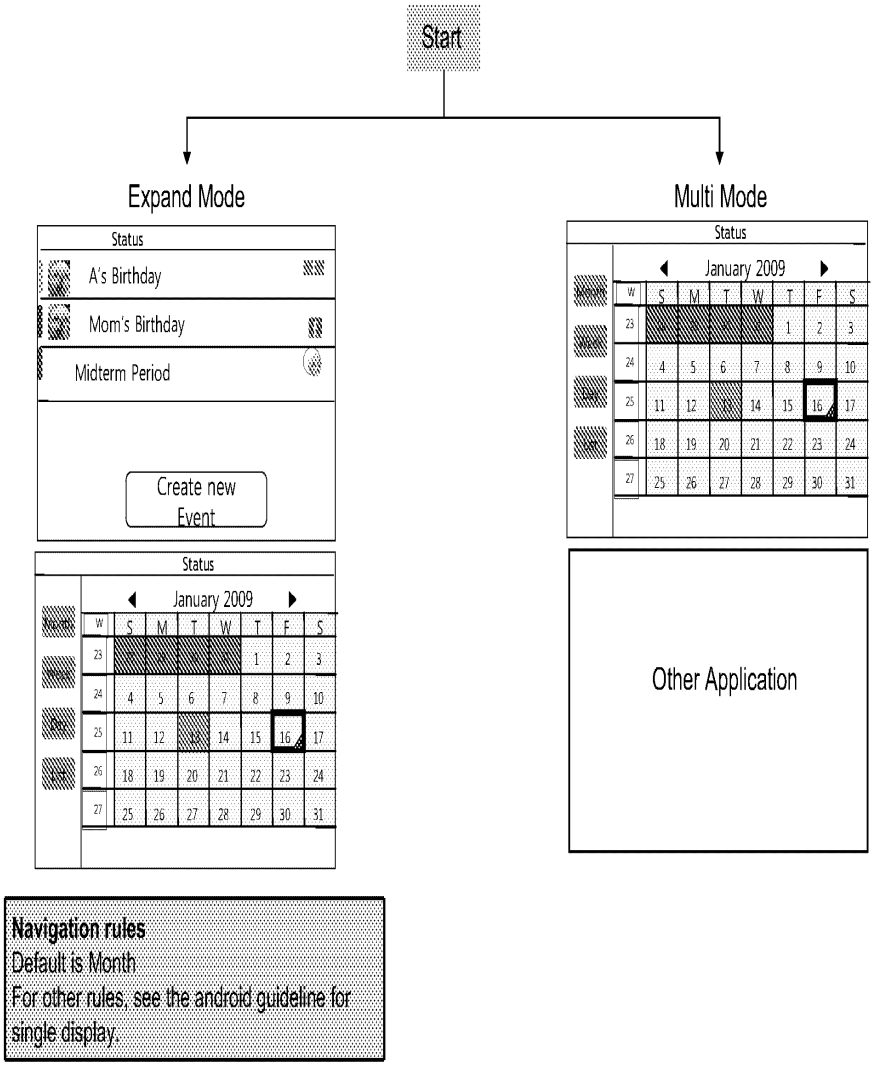
1.1 – Start Screen : Portrait



Navigation rules
Default is Month
For other rules, see the android guideline for single display.

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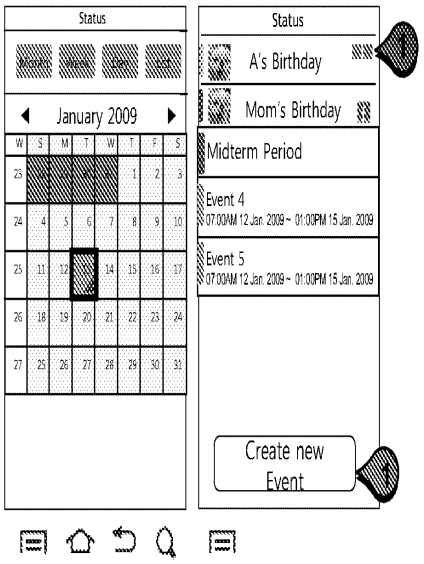
1.1 – Start Screen : Landscape



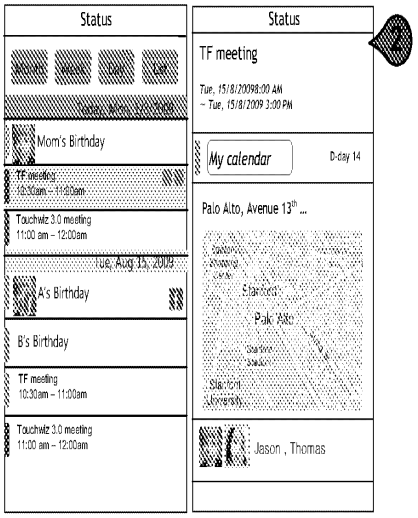
Navigation rules
Default is Month
For other rules, see the android guideline for single display.

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1.2 – Portrait



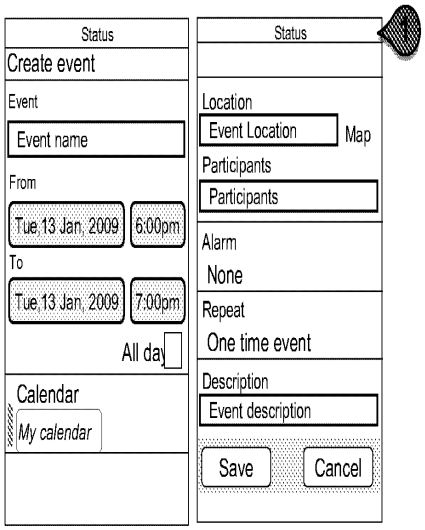
1	**Month & Event list of selected day** Week, Day is same layout rule.
2	**List & Detail** Detail of Selected event is displayed in sub screen.



1	**Create New Event** Create new event button is located sub screen

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1.2 – Portrait

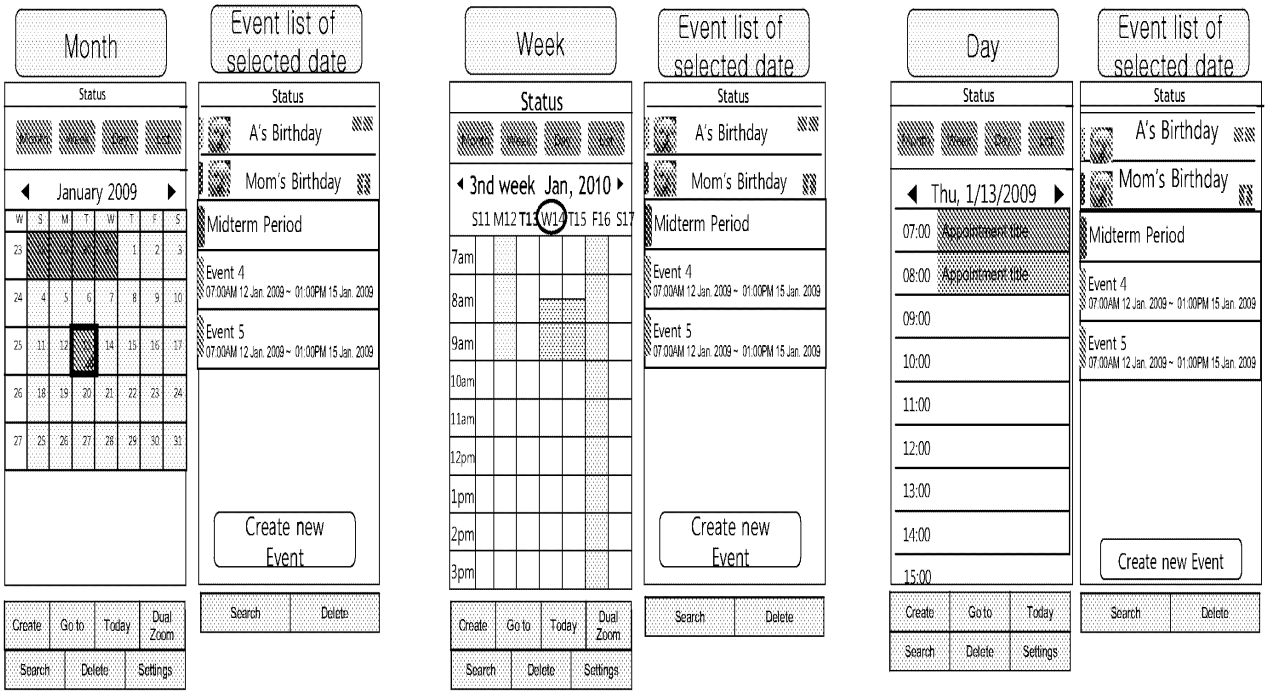


1 **Create Event**
Event elements are separated to 2 screen.
Each screen element can scroll separately.

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Calendar

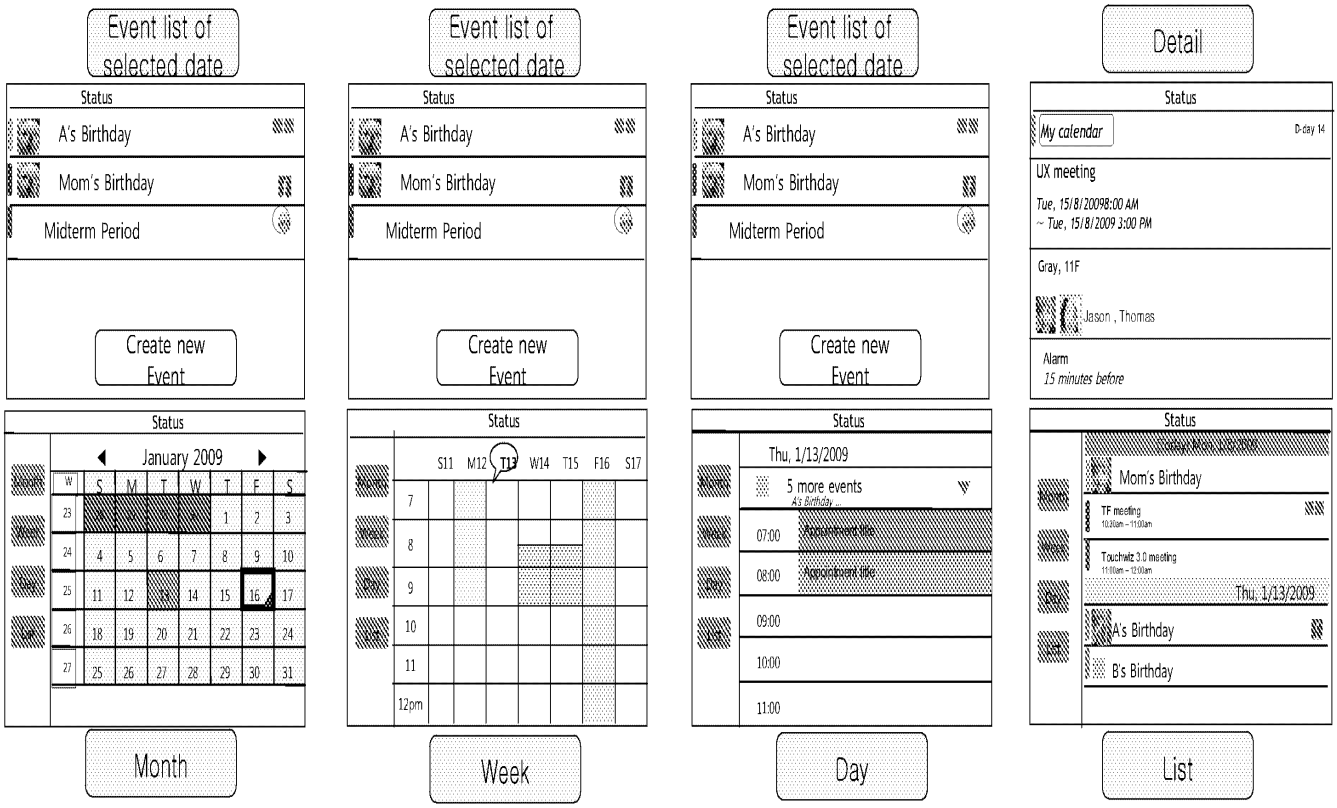
1.2 – Portrait

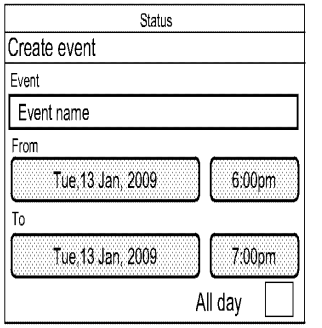


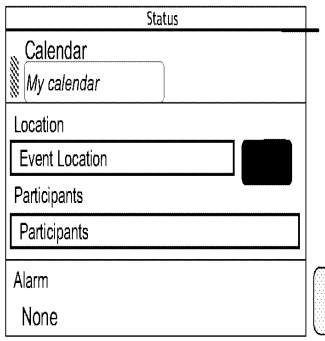
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Calendar

1.3 – Landscape







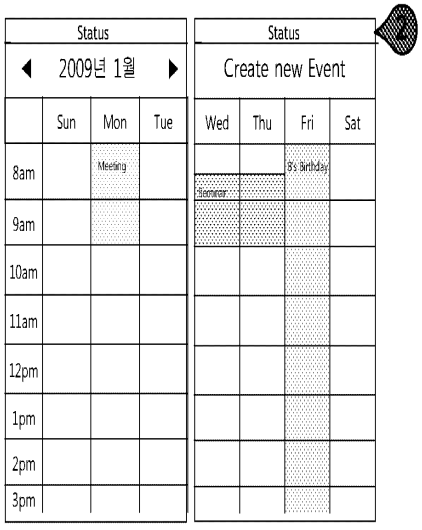
Create new event

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1.4 – Dual Zoom Screen



1	**Month (Dual Zoom)** Month calendar is displayed over dual screen Selected day is not used this mode.
2	**Week (Dual Zoom)** Week calendar is displayed over dual screen Selected day is not used this mode.



1	**Event** Display event summary
2	**Create New Event Button** Go to event make screen
3	**Selected Day** If User select a day, Detail pop-up is displayed

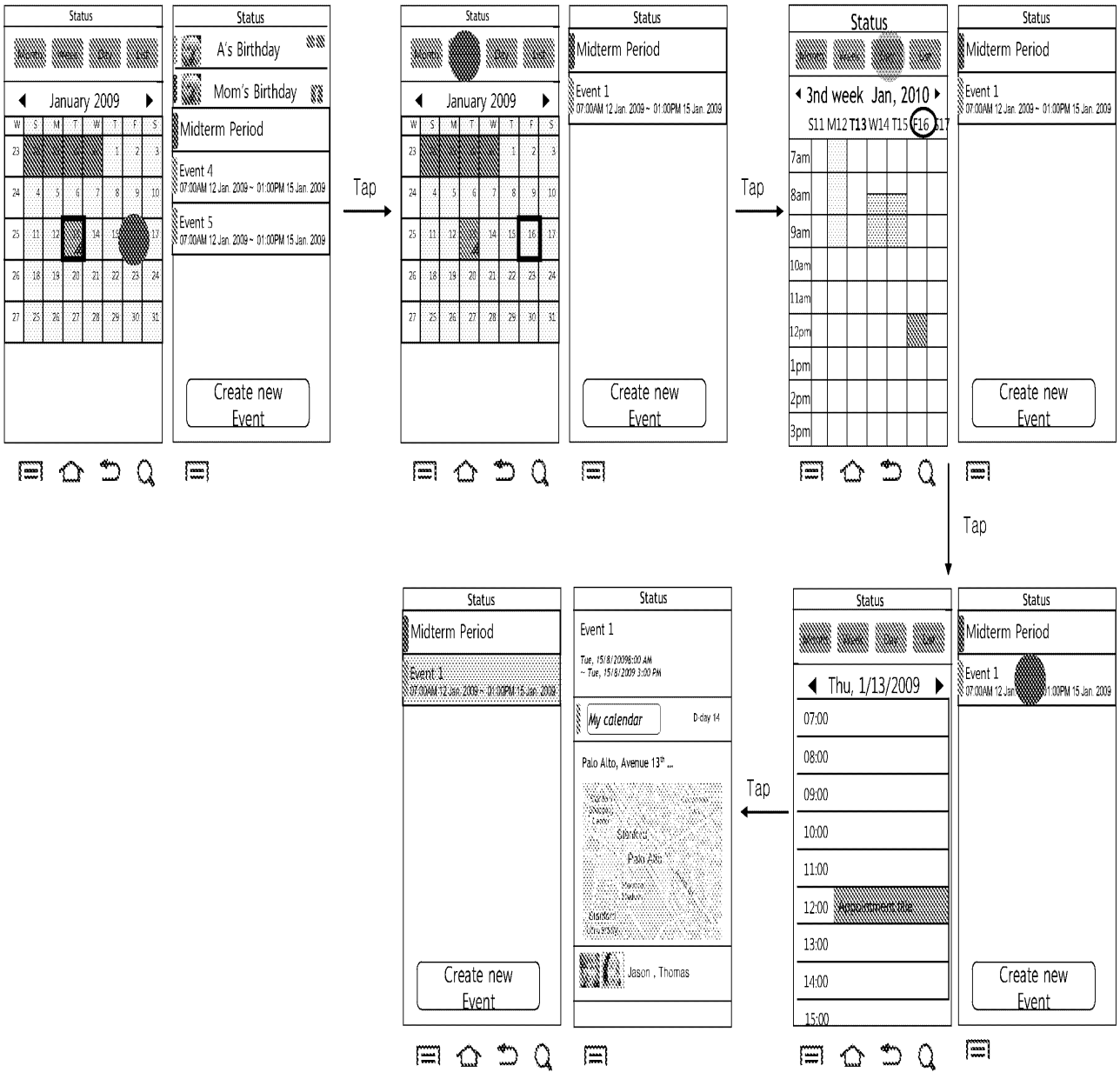
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2. Scenario

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2. Scenario

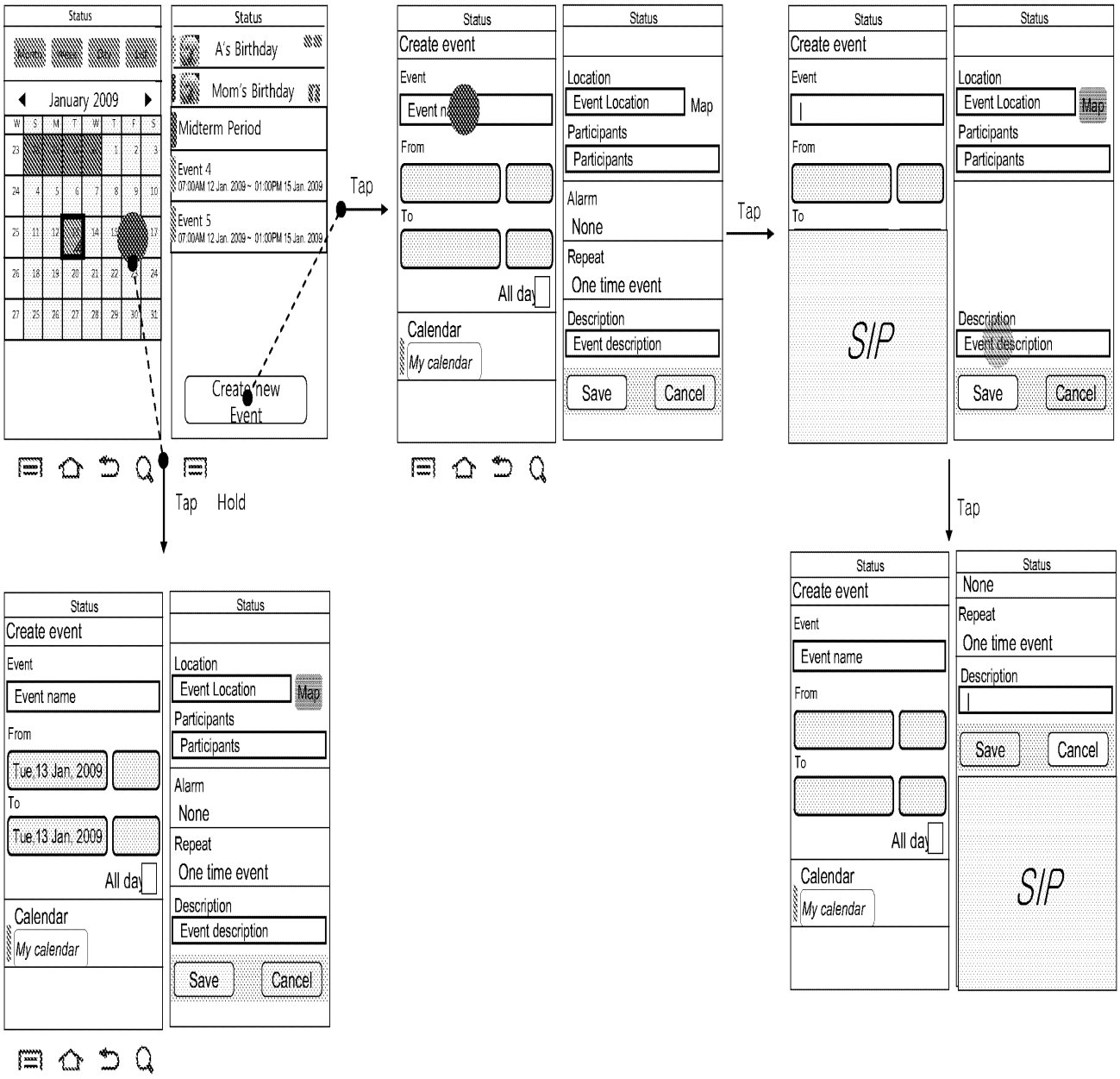
2.1 – Calendar Navigation



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2. Scenario

2.2 – Create New Event

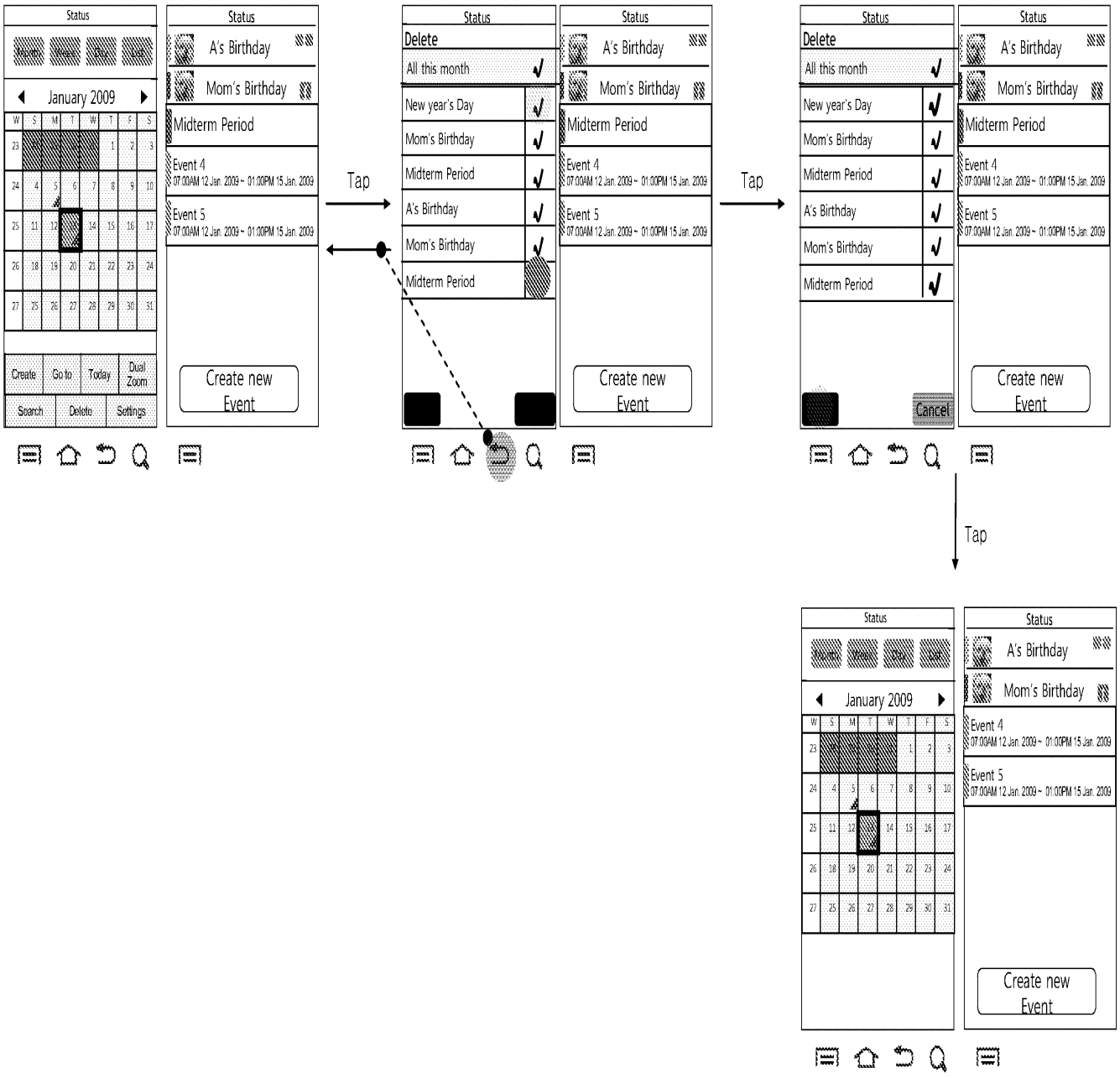


Event 입력 방법은 Single Display를 따른다.

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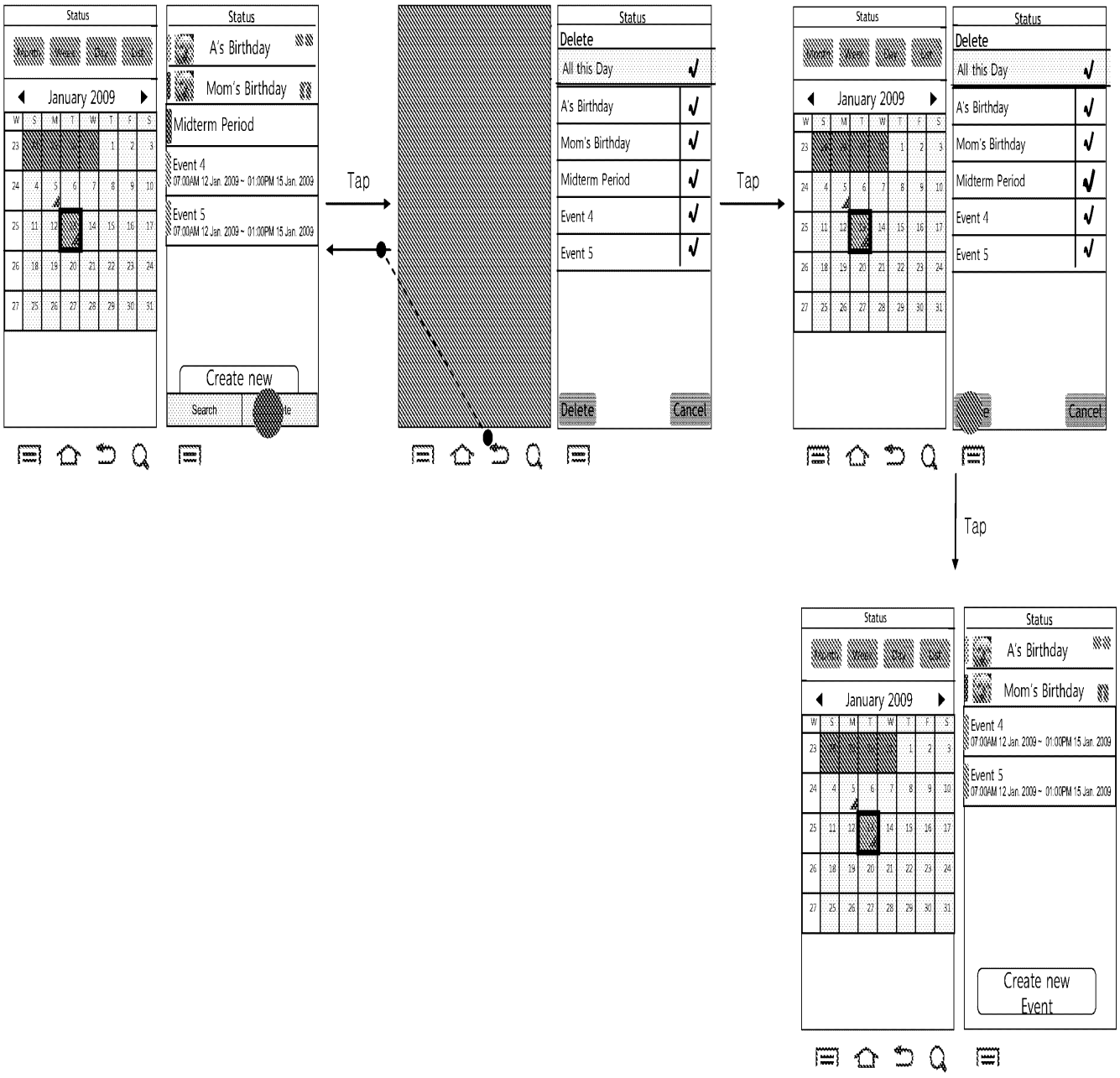
2. Scenario

2.3 – Menu>Delete : Month



2. Scenario

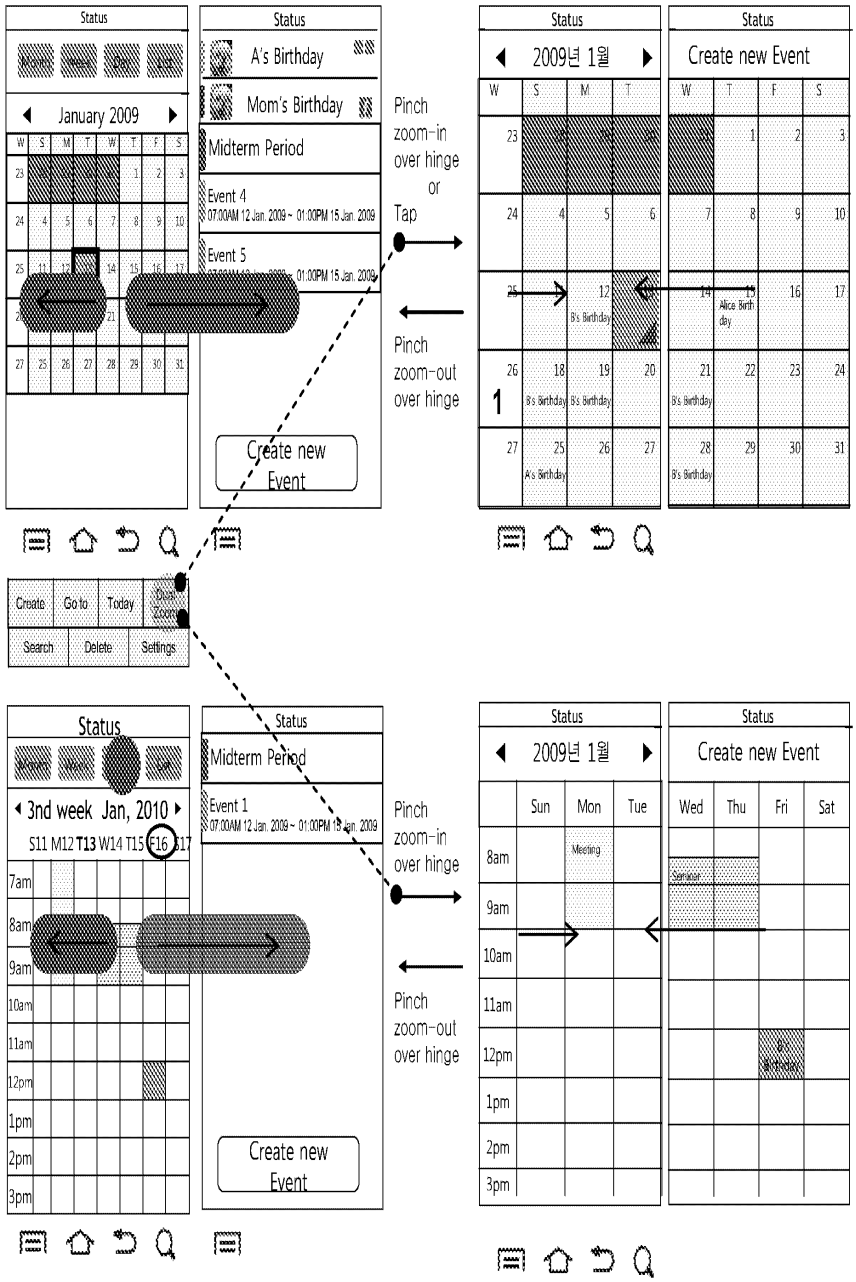
2.3 – Menu>Delete : Day Event



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2. Scenario

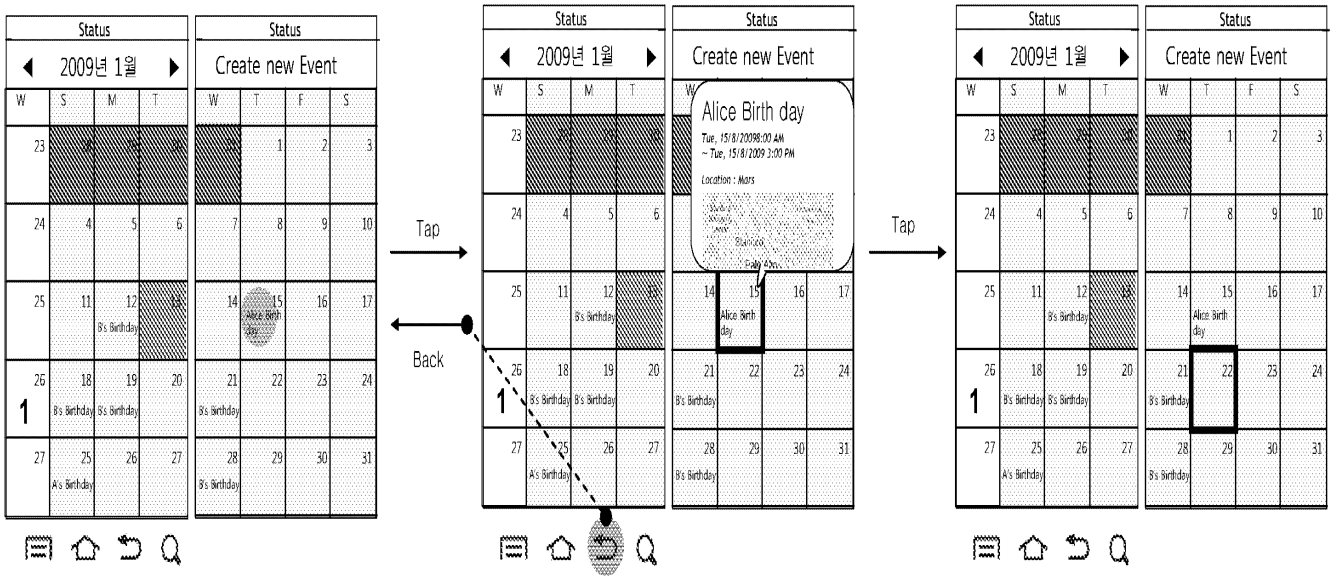
2.4 – Dual Zoom



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2. Scenario

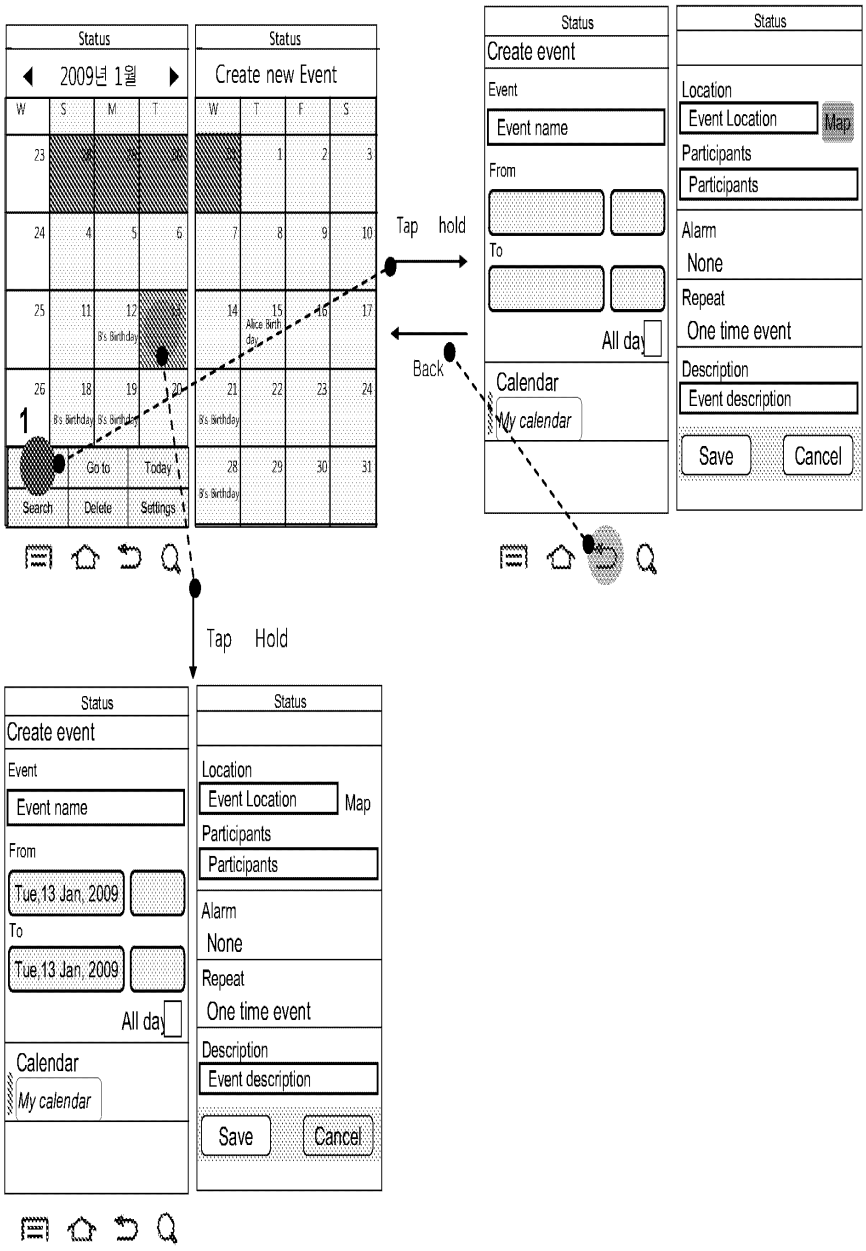
2.4 – Dual Zoom : Select a day



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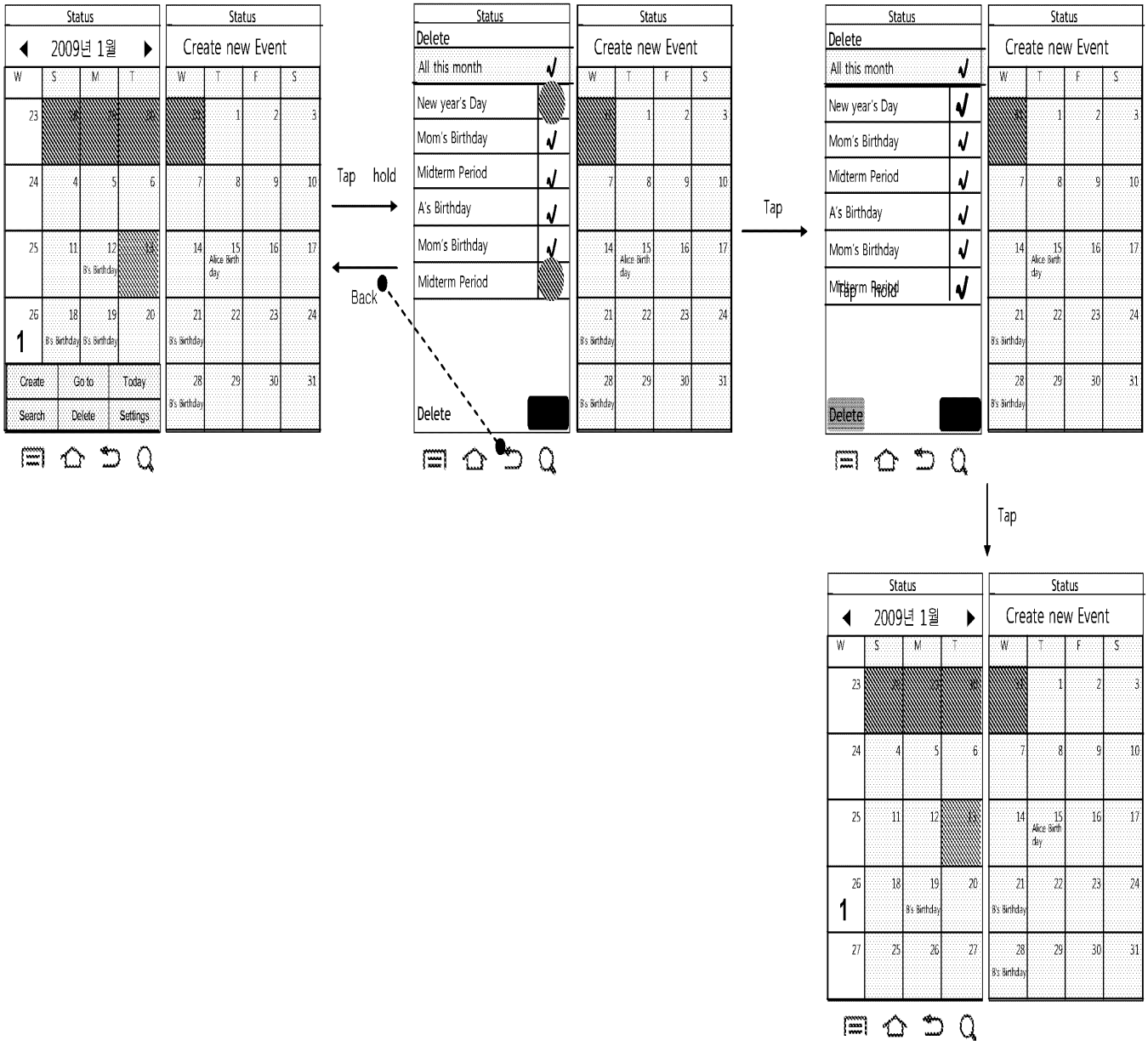
2. Scenario

2.4 – Dual Zoom : Create a event



2. Scenario

2.4 – Dual Zoom : Delete event



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Dual Display Call UI Guideline
for Android

V.1.0

December 27, 2010

Contact Point :
Hyunjin Kim (truthkim@samsung.com) +82-10-8908-4559
Joonkyu Seo (joonkyu.seo@samsung.com) +82-10-2431-1289
Juyoun Lee (florial.lee@samsung.com) +82-10-4339-0026
Hyunjeong Song (songah.song@samsung.com) +82-2-2255-5563
Dongseok Ryu (dongseok.ryu@samsung.com) +82-2-2255-5424

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Document History

No.	Sent	Version	File Name	Contents
01	December 27, 2010	v.1.0	[Duplex_Android] Call_v.1.0_20101227	Document Origination

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Notation Guide

Comments Style

Principle Blahblahblahblah	Spec Blahblahblahblah	Blahblahblahblah	Comment Blahblahblahblah
A definition of UI principle. Definition of comments that can be fundamental and exceptional conditions, Including the definition about the vocabulary.	Spec Description	Description for situation change in scenario and condition & Default Value	Samsung UX Team Comment

Line Style

Primary Flow	Secondary Flow	Defining functions

Flow Iconography

Question?	Idle
Decision Point	End Flow: Idle Screen

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Document Flag

Document Flag		
v.xx Added BlahblahblahBlahblahblah	v.xx Updated BlahblahblahBlahblahblah	v.xx Added BlahblahblahBlahblahblah / v.xx Updated BlahblahblahBlahblahblah
Added page	Updated page	Keep Previous History

Document Flag		
TBD	v.xx Deleted : Blahblahblah	See Android Guideline
TBD functions	Deleted functions	The rule is same with the single android phone.

Document Flag	
Workflows	Workflows
AT&T MAXD UE flows	Samsung UE flows

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2.2 - Incoming Call
2.3 - Reject with message
2.4 - 2nd incoming Call
2.5 - Incoming call - Overturn

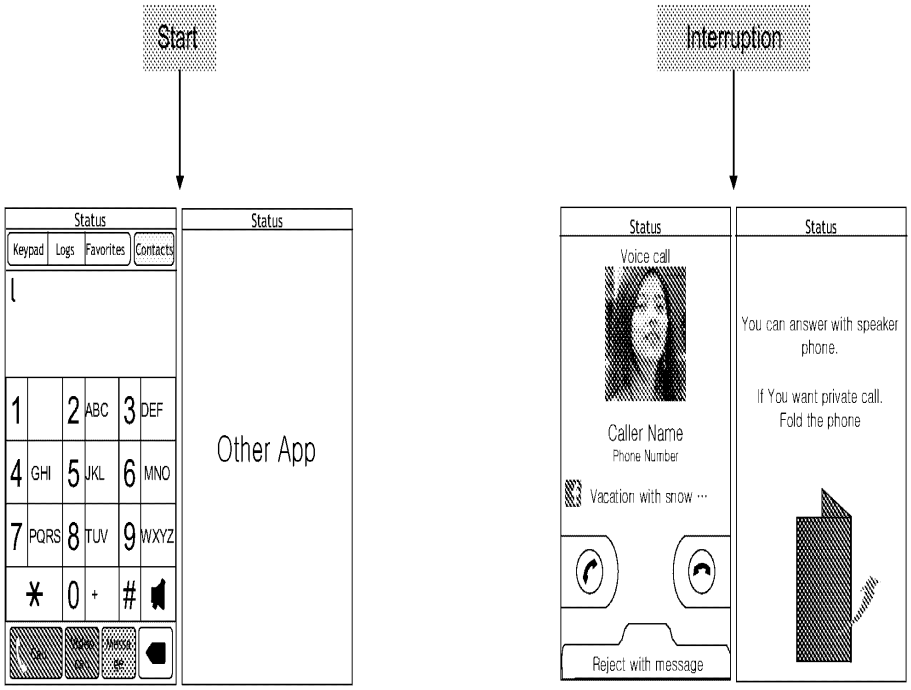
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1. Key Screen

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1. Key-screen

1.1 – Call Start Screen : Portrait

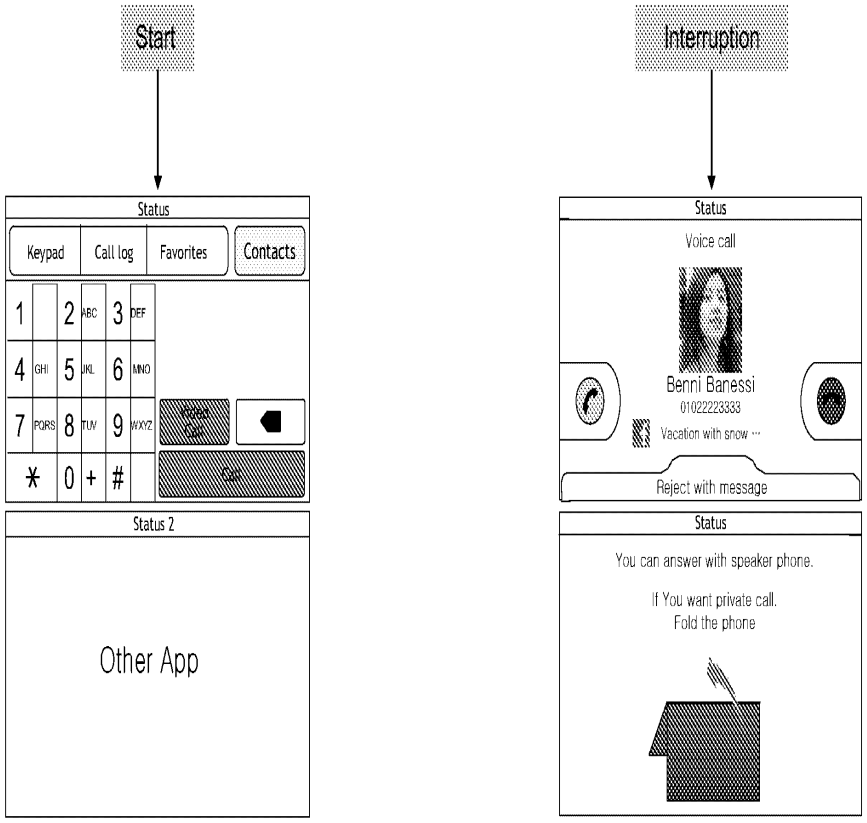


Navigation rules
Call do not support expand view except folding information.
For other rules, see the android guideline for single display.

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1. Key-screen

1.1 – Call Start Screen : Landscape

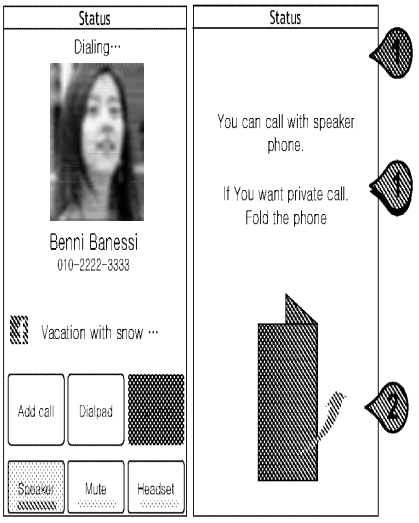


Navigation rules
Call do not support expand view except folding information.
For other rules, see the android guideline for single display.

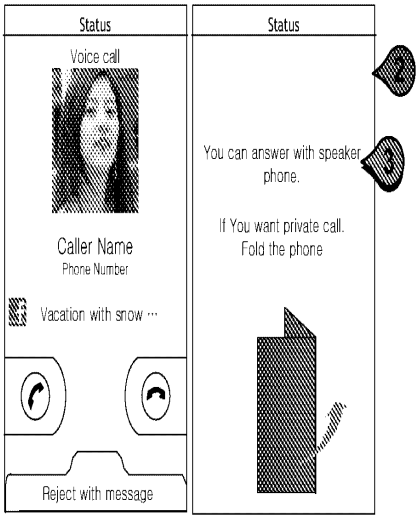
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1. Key-screen

1.2 – Portrait



1	**Outgoing call** Display folding guide in sub screen
2	**Incoming call** Display folding guide in sub screen



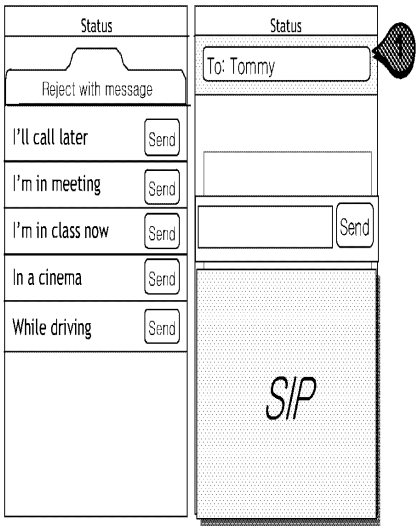
1	**Folding guide message** Folding message for outgoing call
2	**Folding guide animation** Iteration folding animation
3	**Folding guide message** Folding message for incoming call

For other rules, see the android guideline for single display.

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1. Key-screen

1.2 – Portrait



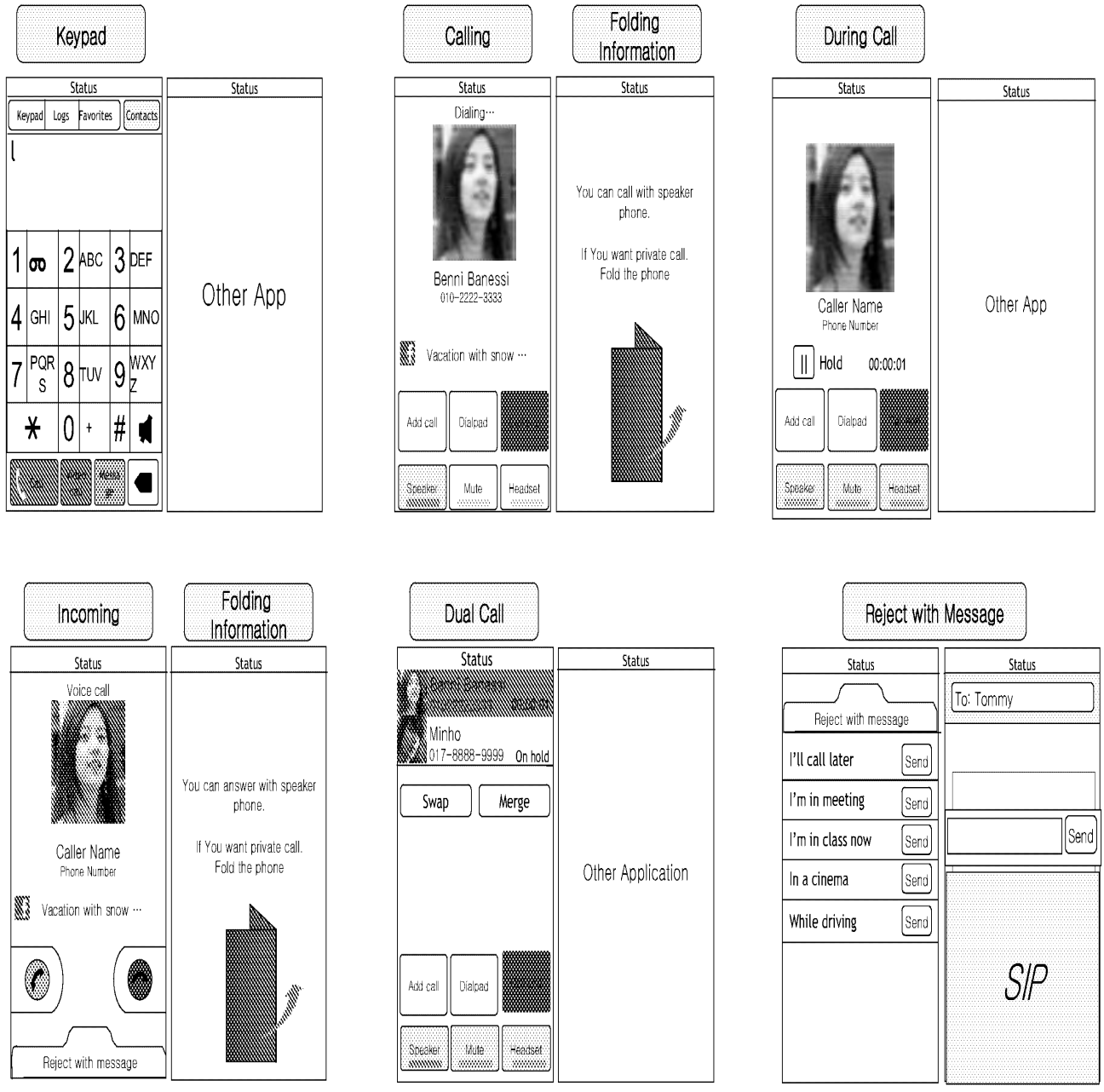
1 **Reject message list & Message input**
User can select or type a reject message.

For other rules, see the android guideline for single display.

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1. Key-screen

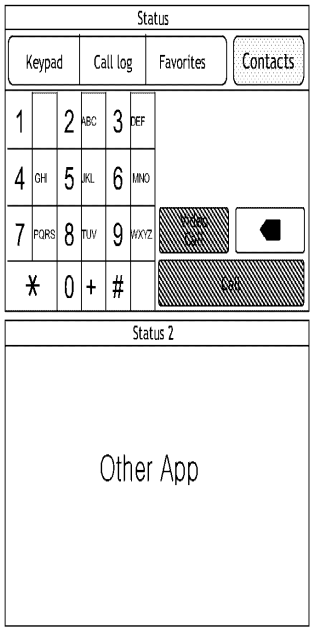
1.2 – Portrait : Key-screen



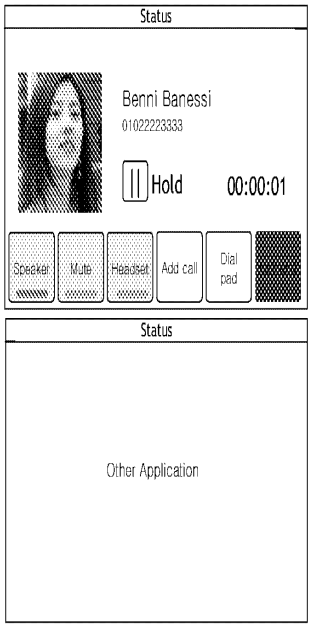
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1. Key-screen

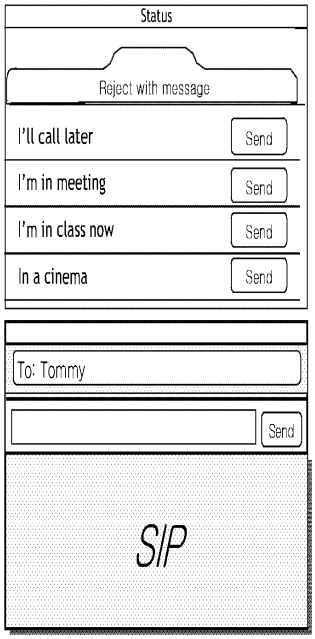
1.3 – Landscape : Key-screen











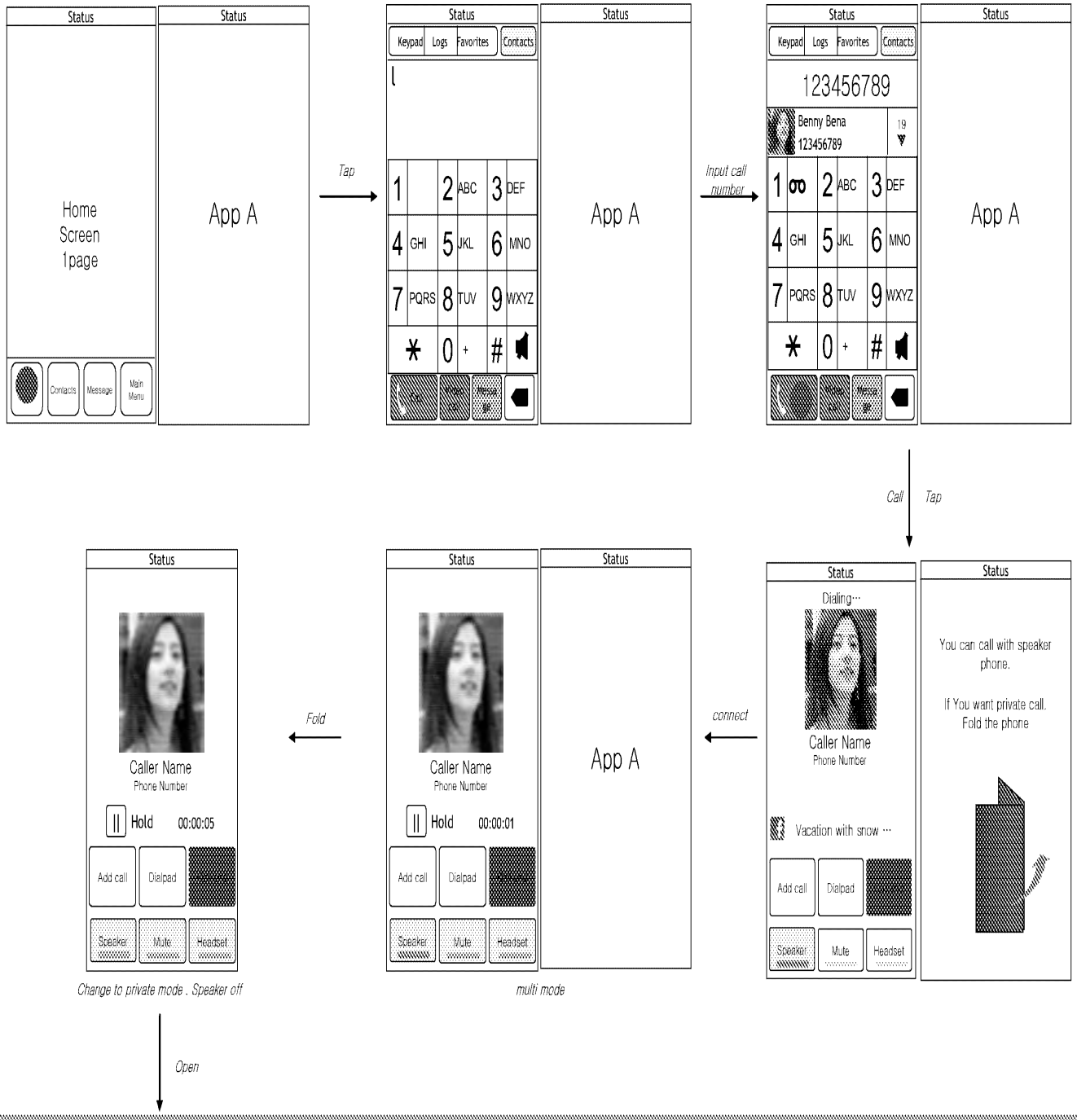
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2. Scenario

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Key Screen

2.1 – Outgoing Call : Multi Mode



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Key Screen

2.1 – Outgoing Call : Multi Mode



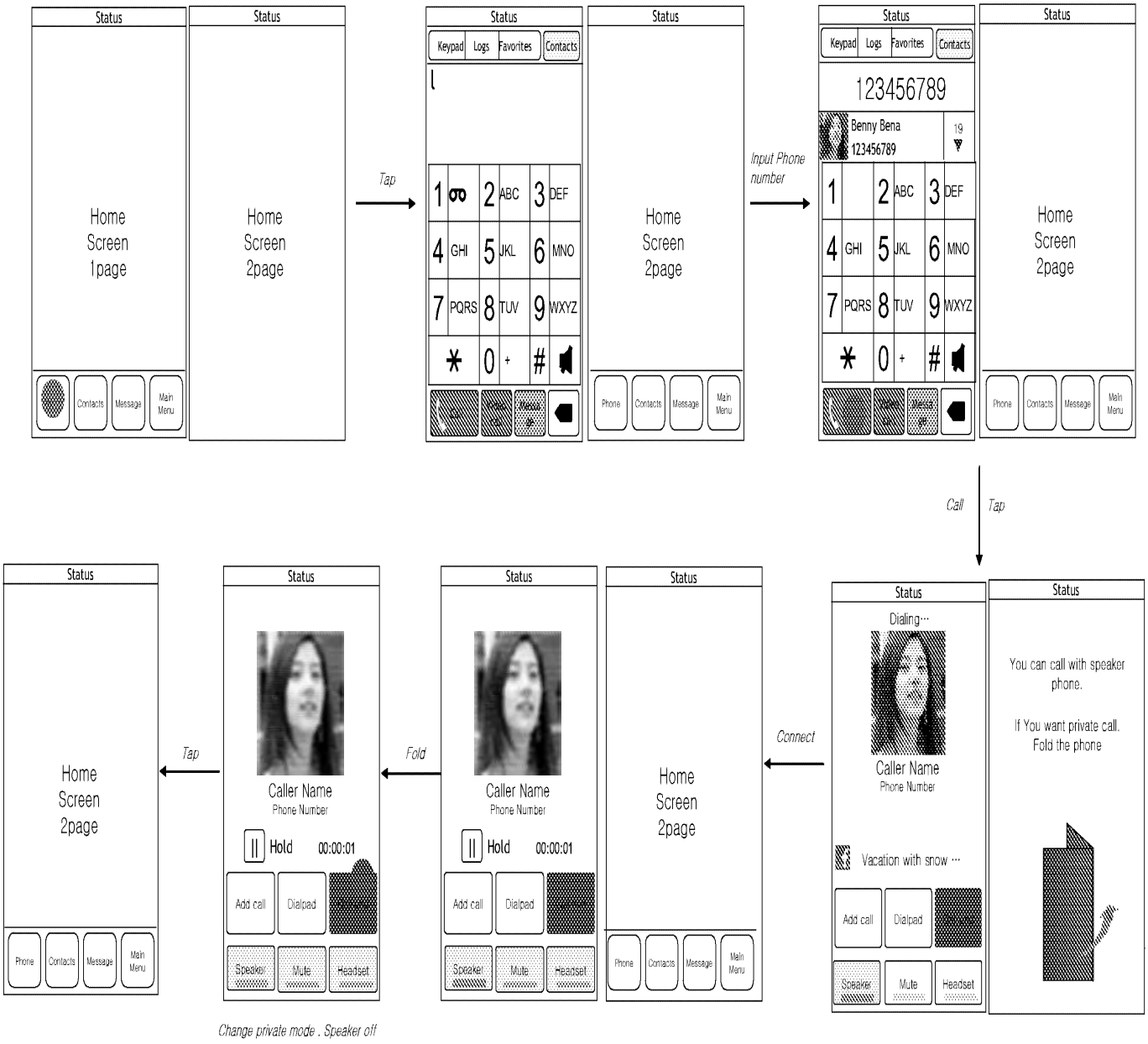
Change to public mode . Speaker On

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Key Screen

2.1 – Outgoing Call : Expand Mode

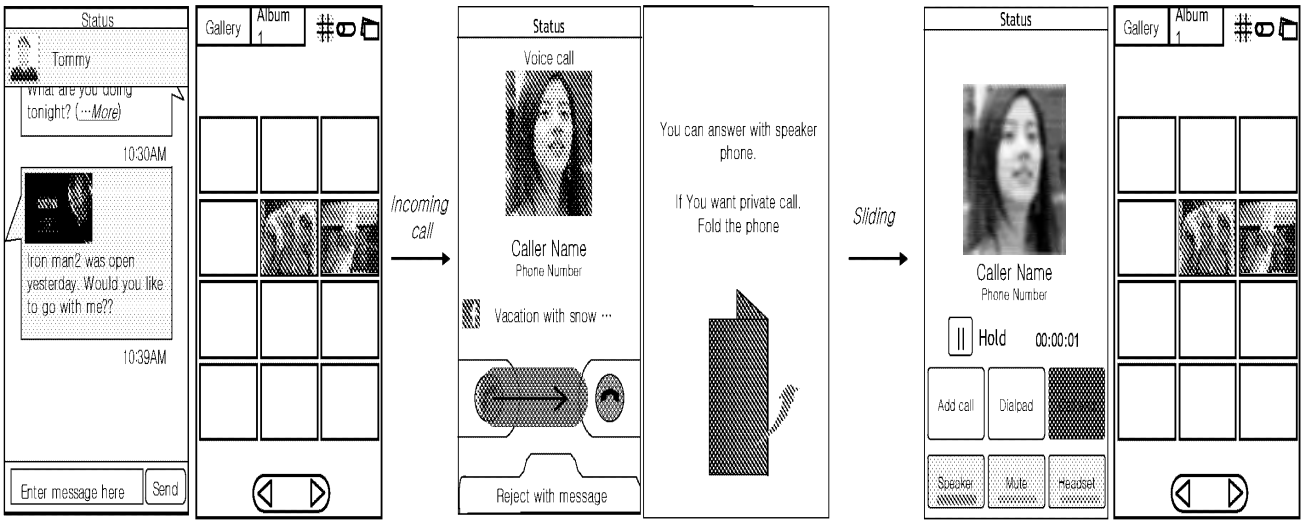
Expand Mode



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Key Screen

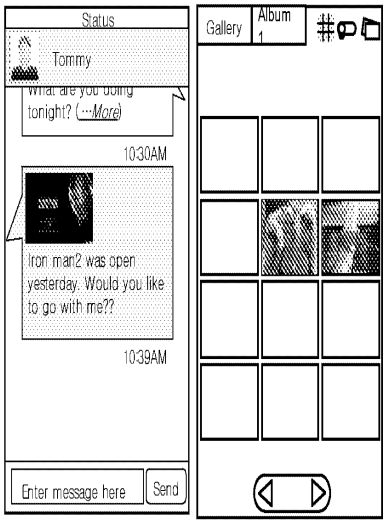
2.2 – Incoming Call : Multi Mode



Folding Information is appeared in right screen while incoming call screen is displayed in left screen.

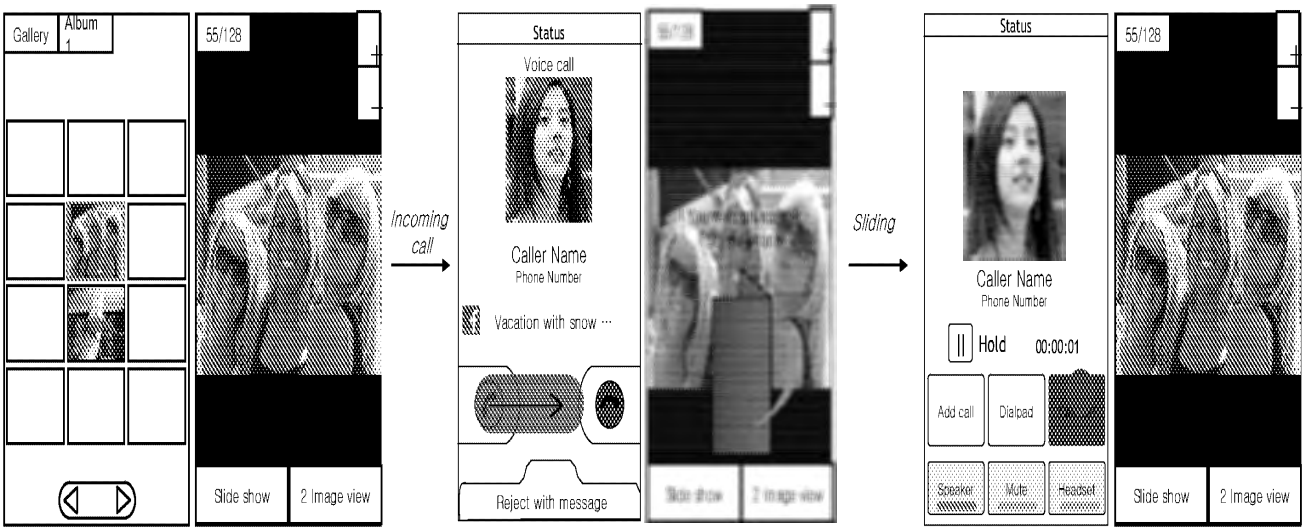
If app B used speaker, It is muted.

Tap

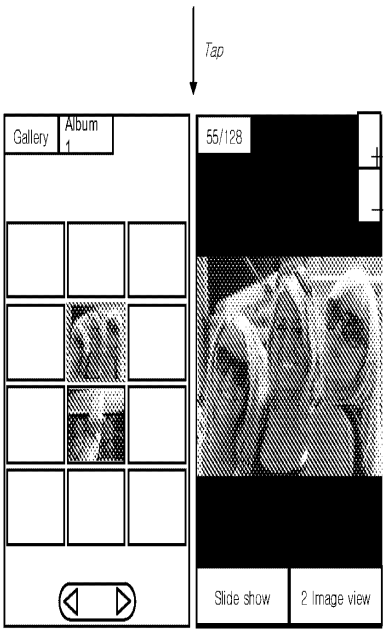


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2.2 – Incoming Call : Expand Mode



Folding Information is appeared in right screen while incoming call screen is displayed in left screen.

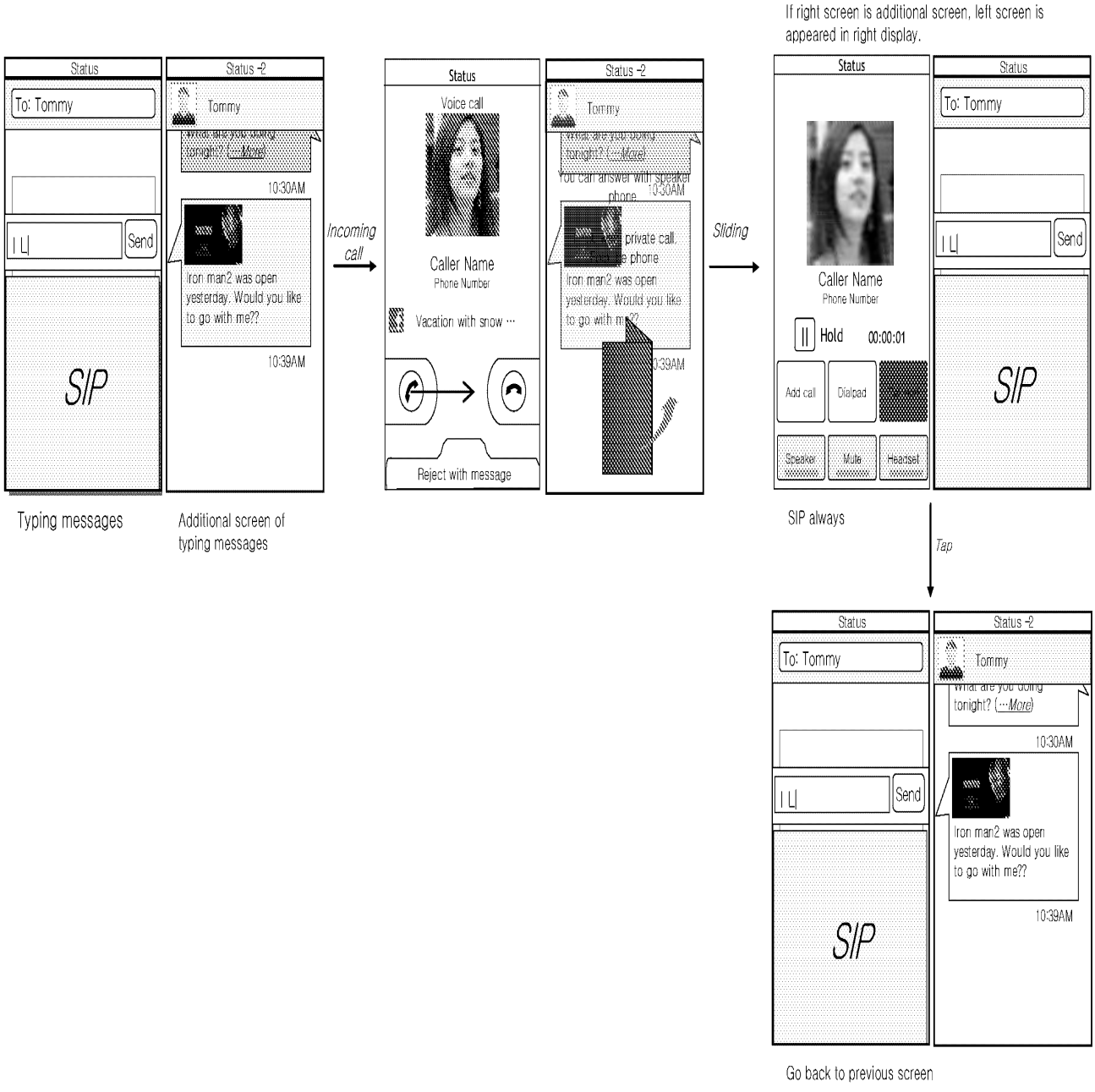


Go back to previous screen

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Key Screen

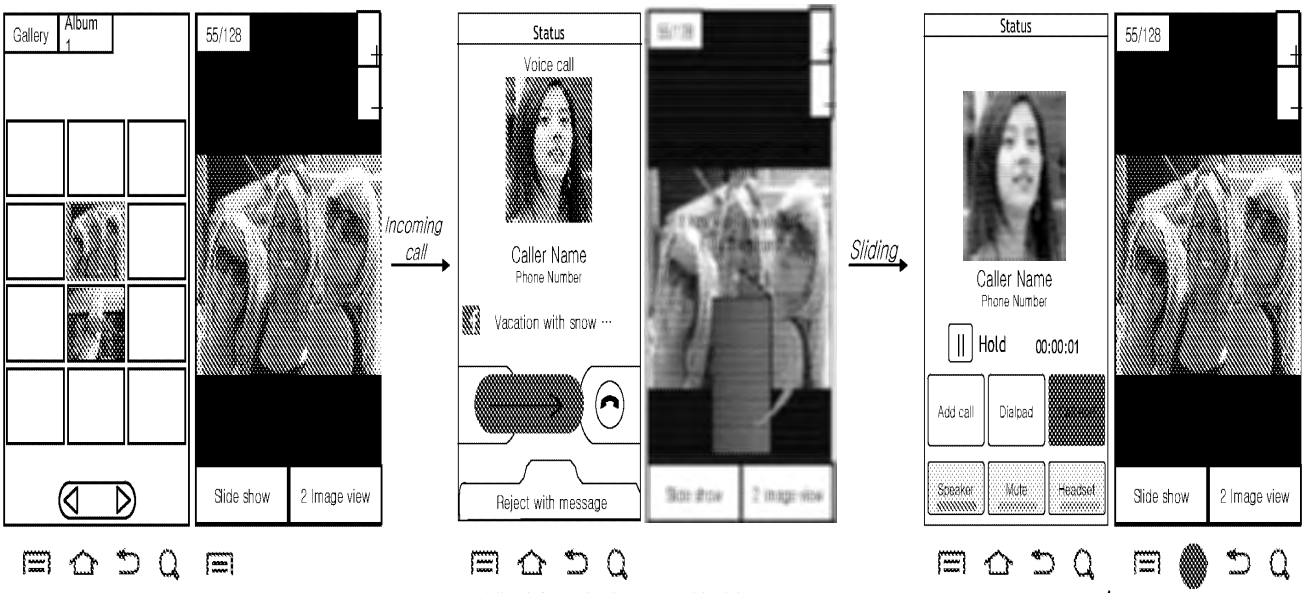
2.2 – Incoming Call : Expand Mode (when typing)



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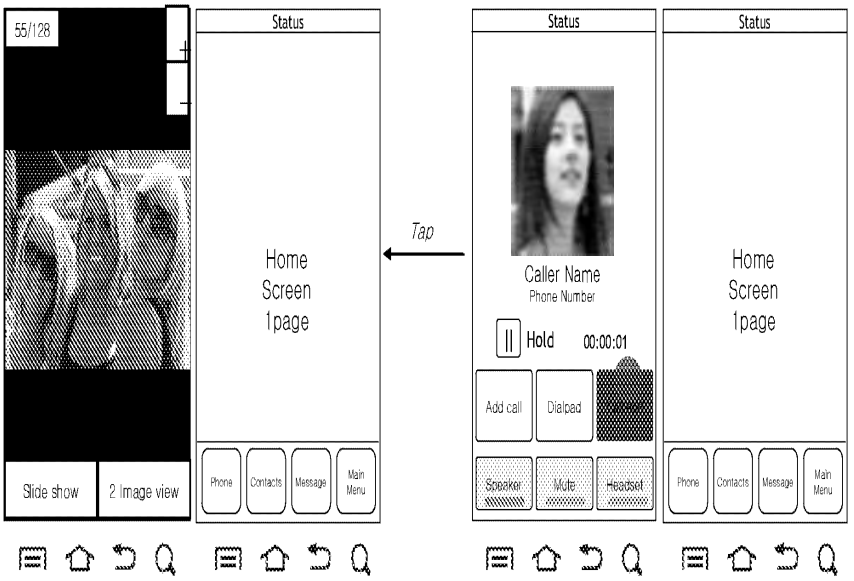
Key Screen

2.2 – Incoming Call : Expand Mode (Play another app)



Folding Information is appeared in right screen while incoming call screen is displayed in left screen.

Tap

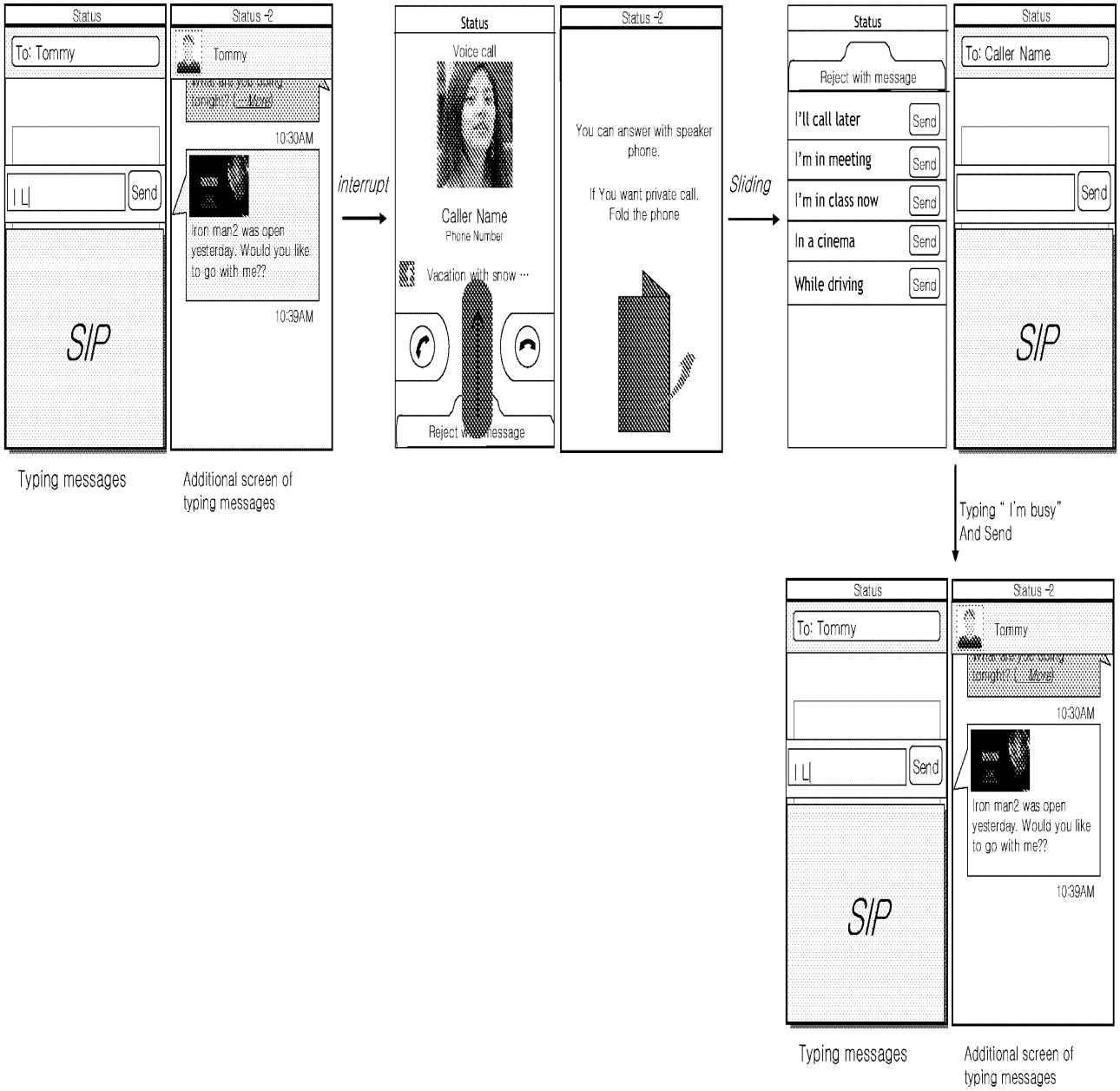


If user play another app, view mode is changed to Multi Mode

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Key Screen

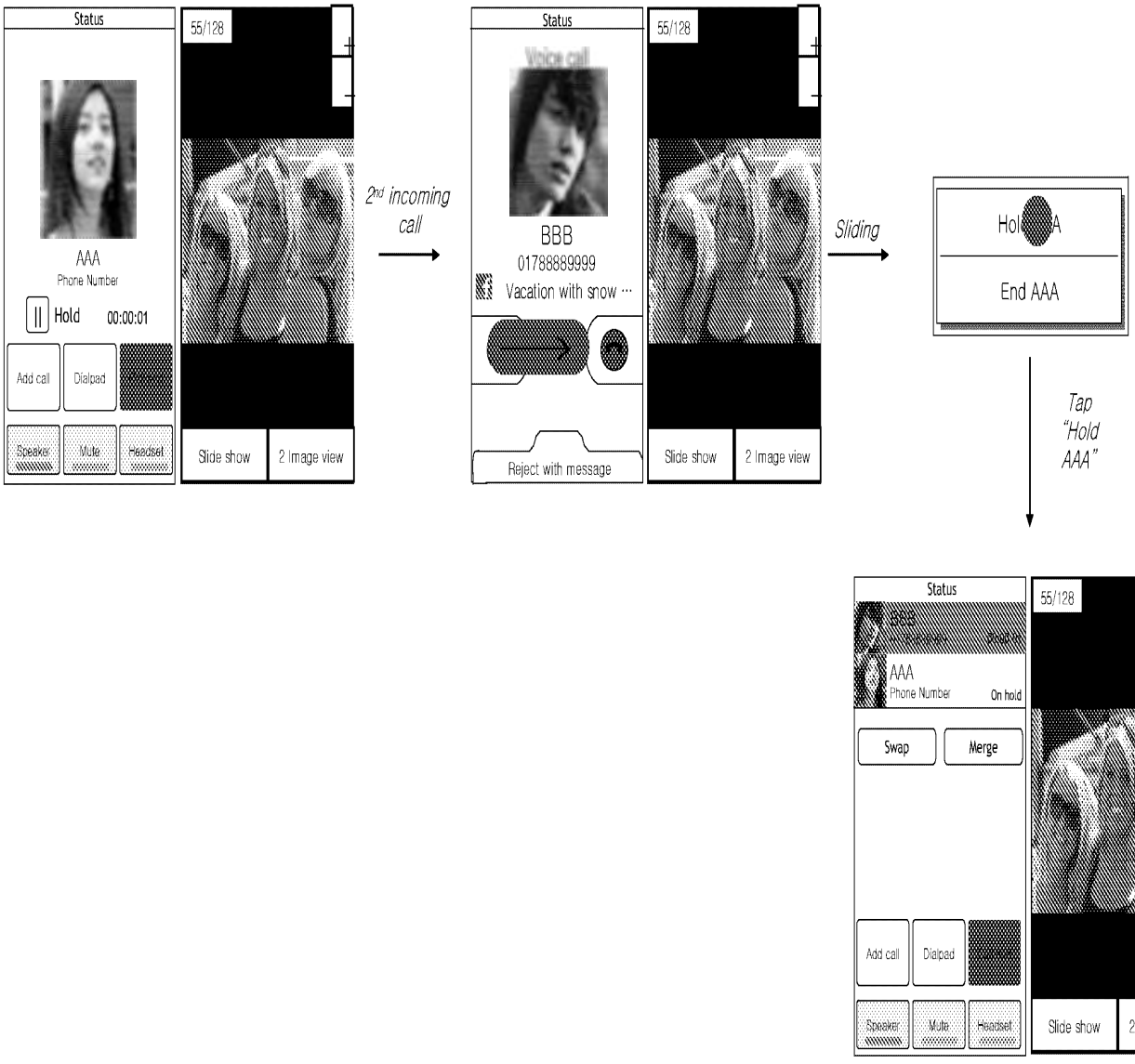
2.3 – Reject with message



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Key Screen

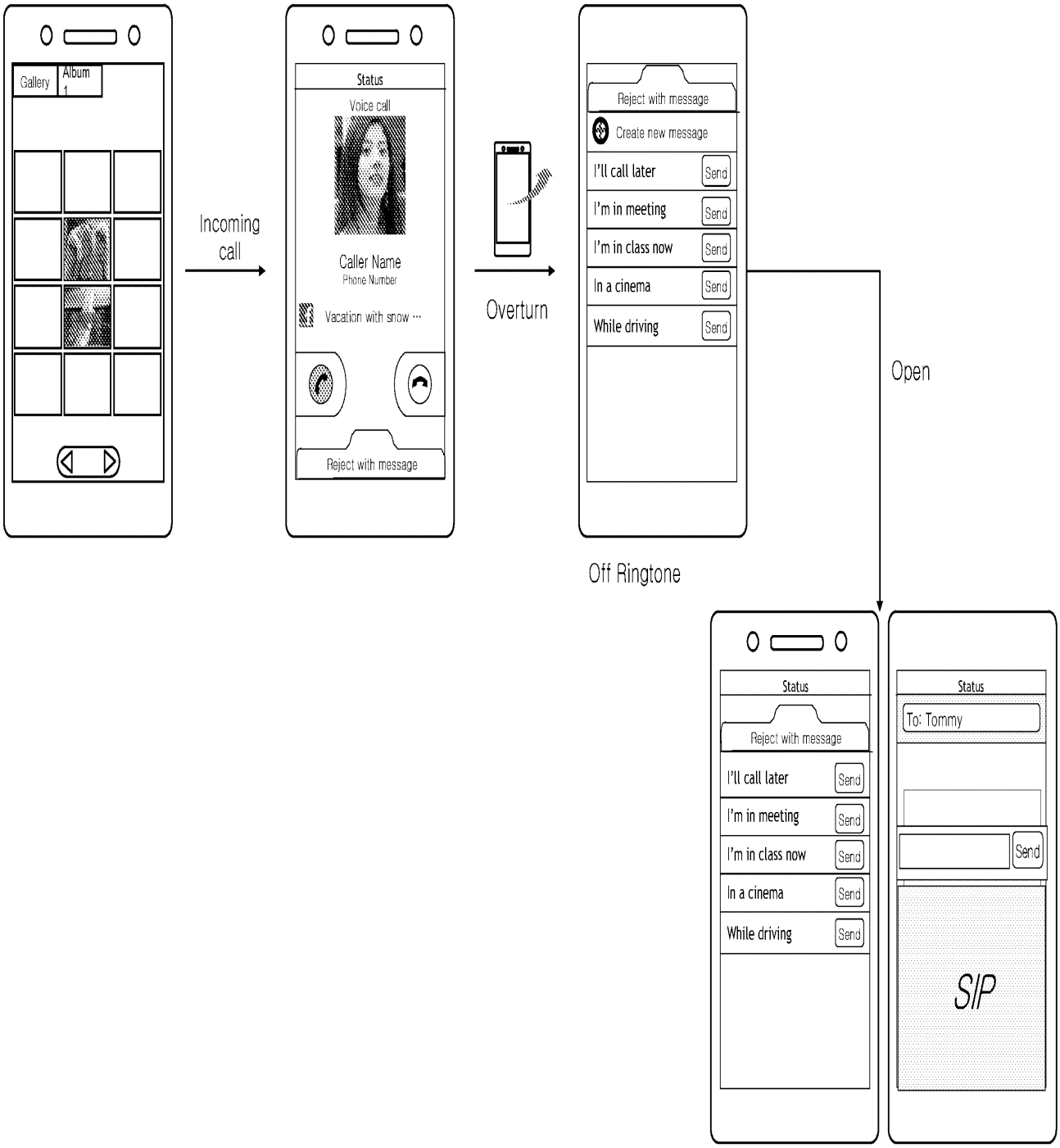
2.4 – 2nd incoming Call



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Key Screen

2.5 – Incoming call - Overturn



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Dual Display Camera UI Guideline
for Android

V.1.0

December 27, 2010

Contact Point :
Hyunjin Kim (truthkim@samsung.com) +82-10-8908-4559
Joonkyu Seo (joonkyu.seo@samsung.com) +82-10-2431-1289
Juyoun Lee (florial.lee@samsung.com) +82-10-4339-0026
Hyunjeong Song (songah.song@samsung.com) +82-2-2255-5563
Dongseok Ryu (dongseok.ryu@samsung.com) +82-2-2255-5424

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Document History

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Notation Guide

Comments Style

Principle Blahblahblahblah	Spec Blahblahblahblah	Blahblahblahblah	Comment Blahblahblahblah
A definition of UI principle. Definition of comments that can be fundamental and exceptional conditions, Including the definition about the vocabulary.	Spec Description	Description for situation change in scenario and condition & Default Value	Samsung UX Team Comment

Line Style

Primary Flow	Secondary Flow	Defining functions

Flow Iconography

	
Decision Point	End Flow: Idle Screen

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Document Flag

Document Flag		
v.xx Added BlahblahblahBlahblahblah	v.xx Updated BlahblahblahBlahblahblah	v.xx Added BlahblahblahBlahblahblah / v.xx Updated BlahblahblahBlahblahblah
Added page	Updated page	Keep Previous History

Document Flag		
TBD	v.xx Deleted : Blahblahblah	See Android Guideline
TBD functions	Deleted functions	The rule is same with the single android phone.

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Workflows	Workflows
AT&T MAXD UE flows	Samsung UE flows

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1.4 - Landscape

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2.1 - Folding interaction
2.2 - Camera mode change
2.3 - Baby Mode Animation
2.4 - Timer shooting

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1. Key Screen

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1. Key-screen

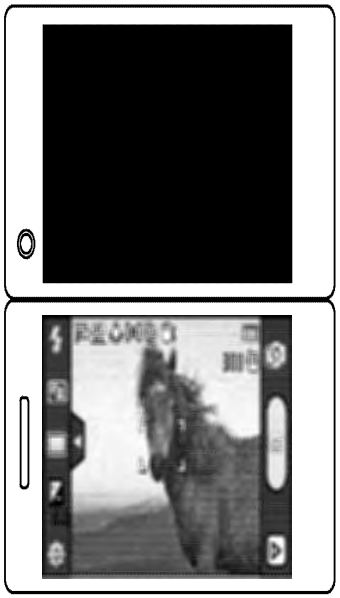
1.1 – Camera Mode (TBD)

Camera location is not decided.

Dual Display HHP can support various camera shooting method.

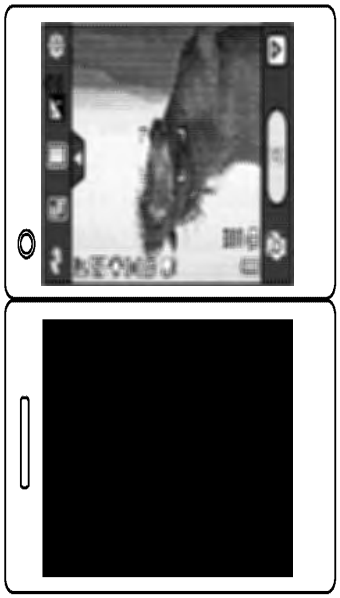
Basic Camera Mode

-Shooting for Scene or models
-Live view and camera menu is displayed in main-screen.
-off sub-screen (user call camera mode menu using two finger double tap)



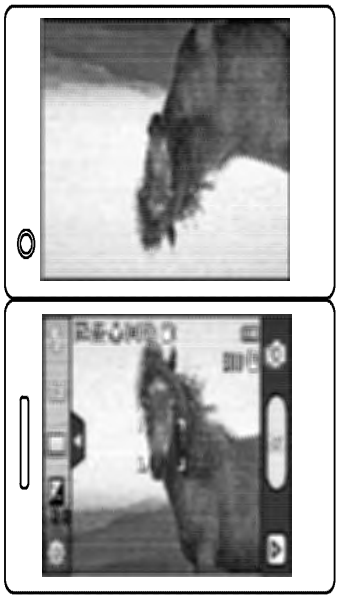
Self Camera Mode

-Shooting for shooter himself.
-Live view and camera menu is displayed in sub-screen (camera is attached screen)
-off main-screen (user call camera mode menu using two finger double tap)



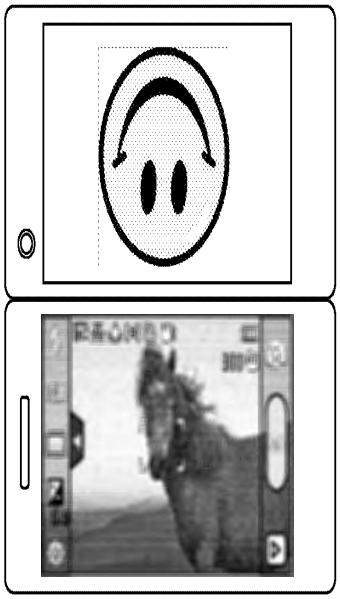
Dual Camera Mode

-Shooting for models
-main-screen display live view and camera menu.
-sub-screen display only live view.



Baby Camera Mode

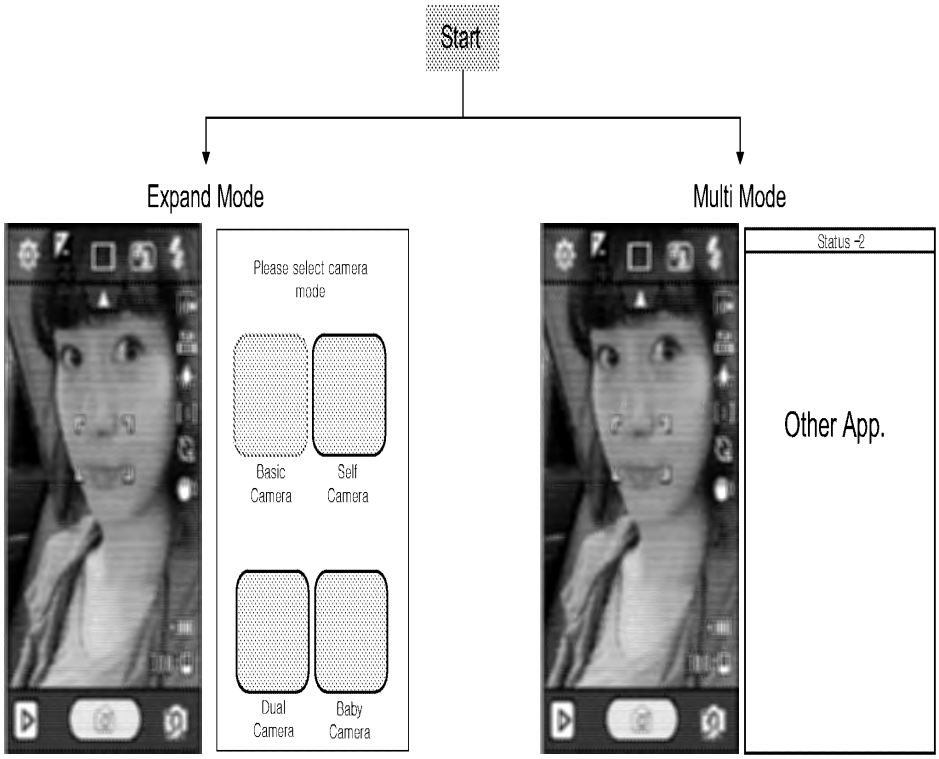
-Shooting for baby
-main-screen display live view and camera menu.
-sub-screen display animation for attention.



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1. Key-screen

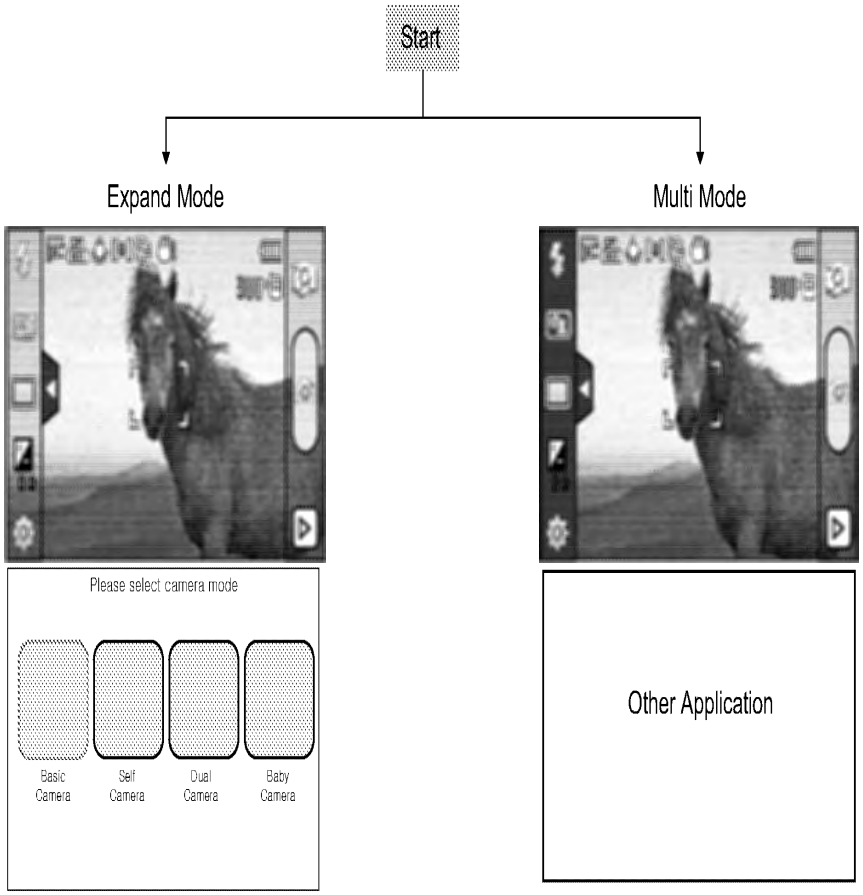
1.2– Camera Start Screen



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1. Key-screen

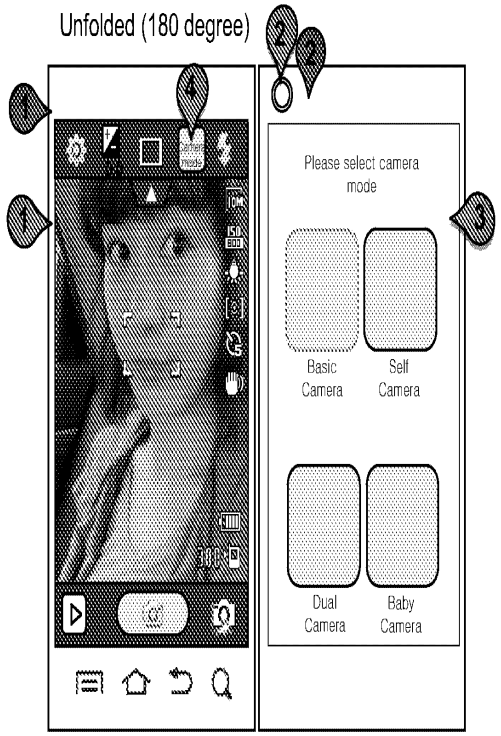
1.2 – Camera Start Screen



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1. Key-screen

1.3 - Portrait



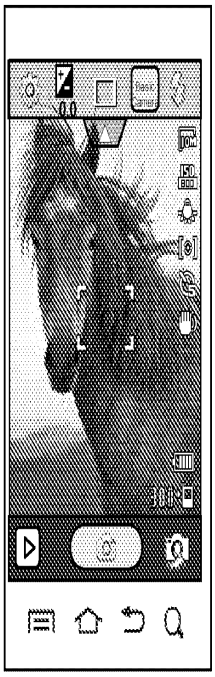
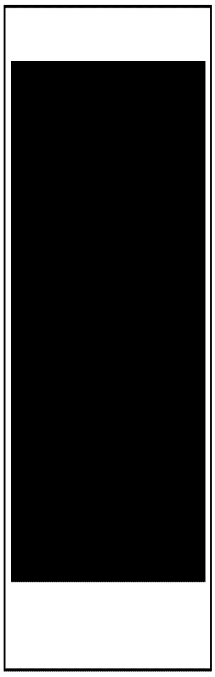
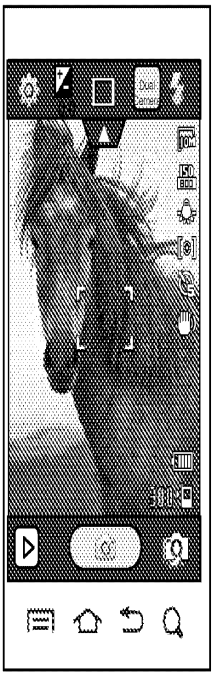
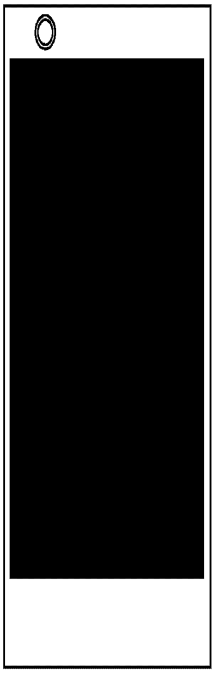
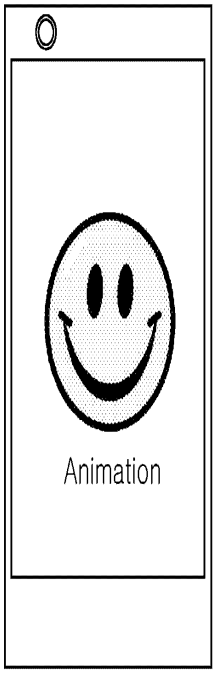
1	**Main Screen: Unfolded** Not have the camera module
2	**Sub Screen : : Unfolded** Have the camera module

1	**Live Screen** follow the single cameras rules.
2	**Camera** TBD
3	**Camera Mode Button** 4 modes : Basic, Self, Dual, Baby
4	**Current Camera mode : Default – Basic camera** User can change the camera mode. Selected Mode icon is displayed Basic Camera Self Camera Dual Camera Baby Camera

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1. Key-screen

1.3 - Portrait

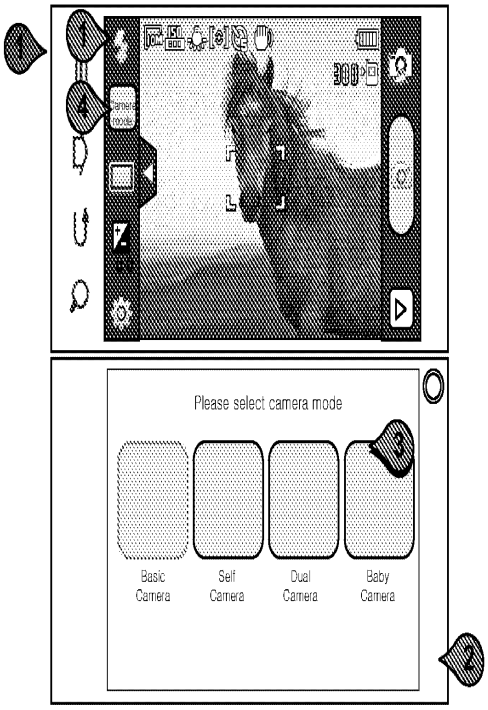
	Basic Camera	Self Camera	Dual Camera	Baby Camera
Main Screen				
Sub Screen				

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1. Key-screen

1.4 - Landscape

Unfolded



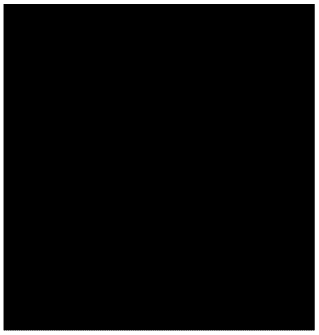
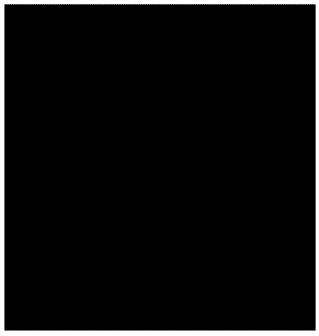
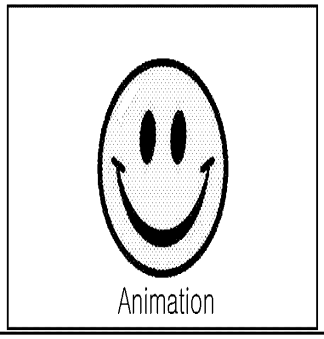
1	**Main Screen: Unfolded** Not have the camera module
2	**Sub Screen : : Unfolded (180 degree)** Have the camera module

1	**Live Screen** follow the single cameras rules.
2	**Camera** TBD
3	**Camera Mode Button** 4 modes : Basic, Self, Dual, Baby
4	**Current Camera mode : Default – Basic camera** User can change the camera mode. Selected Mode icon is displayed Basic Camera Self Camera Dual Camera Baby Camera

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1. Key-screen

1.4 - Landscape

	Main Screen	Sub Screen
Basic Camera		
Self Camera		
Dual Camera		
Baby Camera		

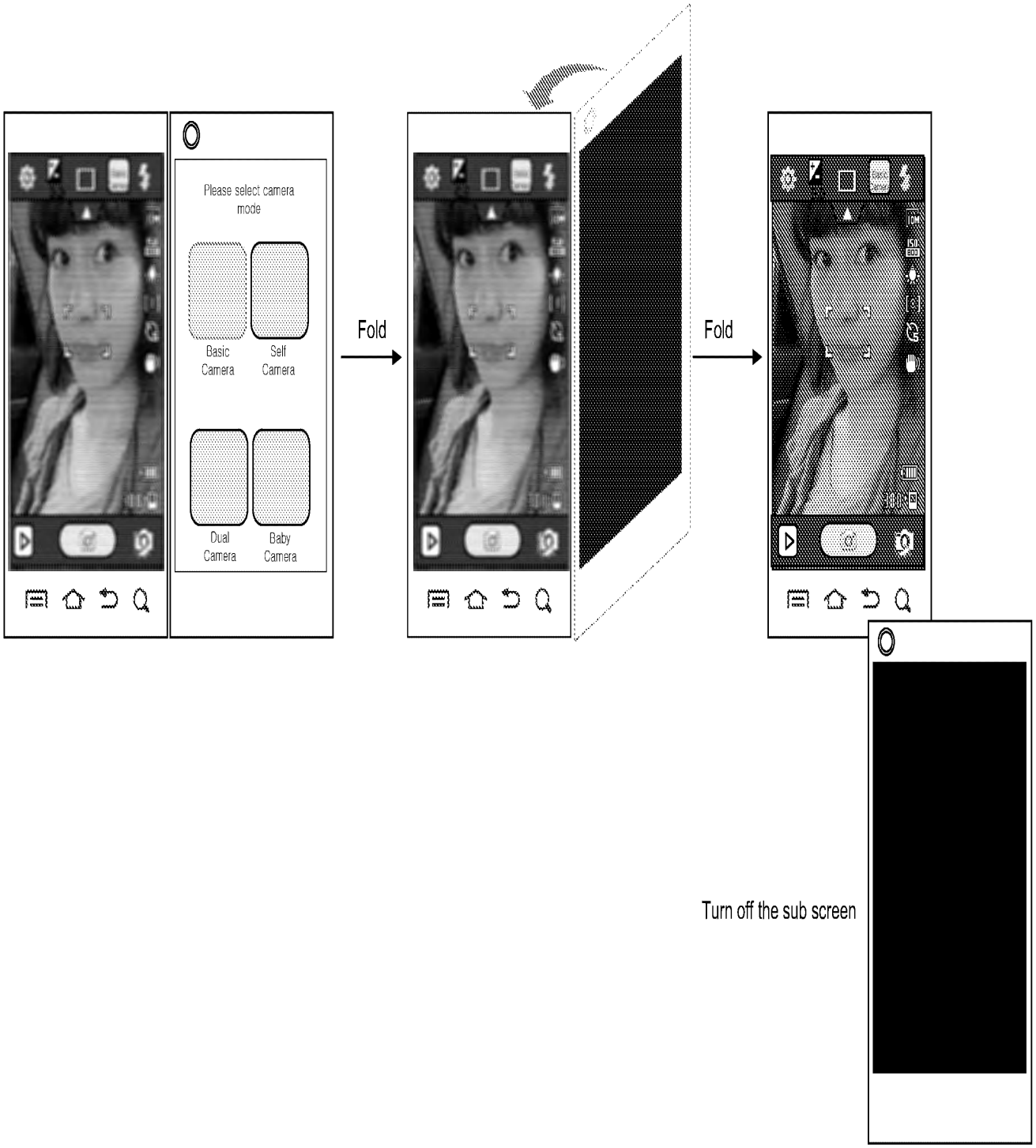
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2. Scenario

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1. Key-screen

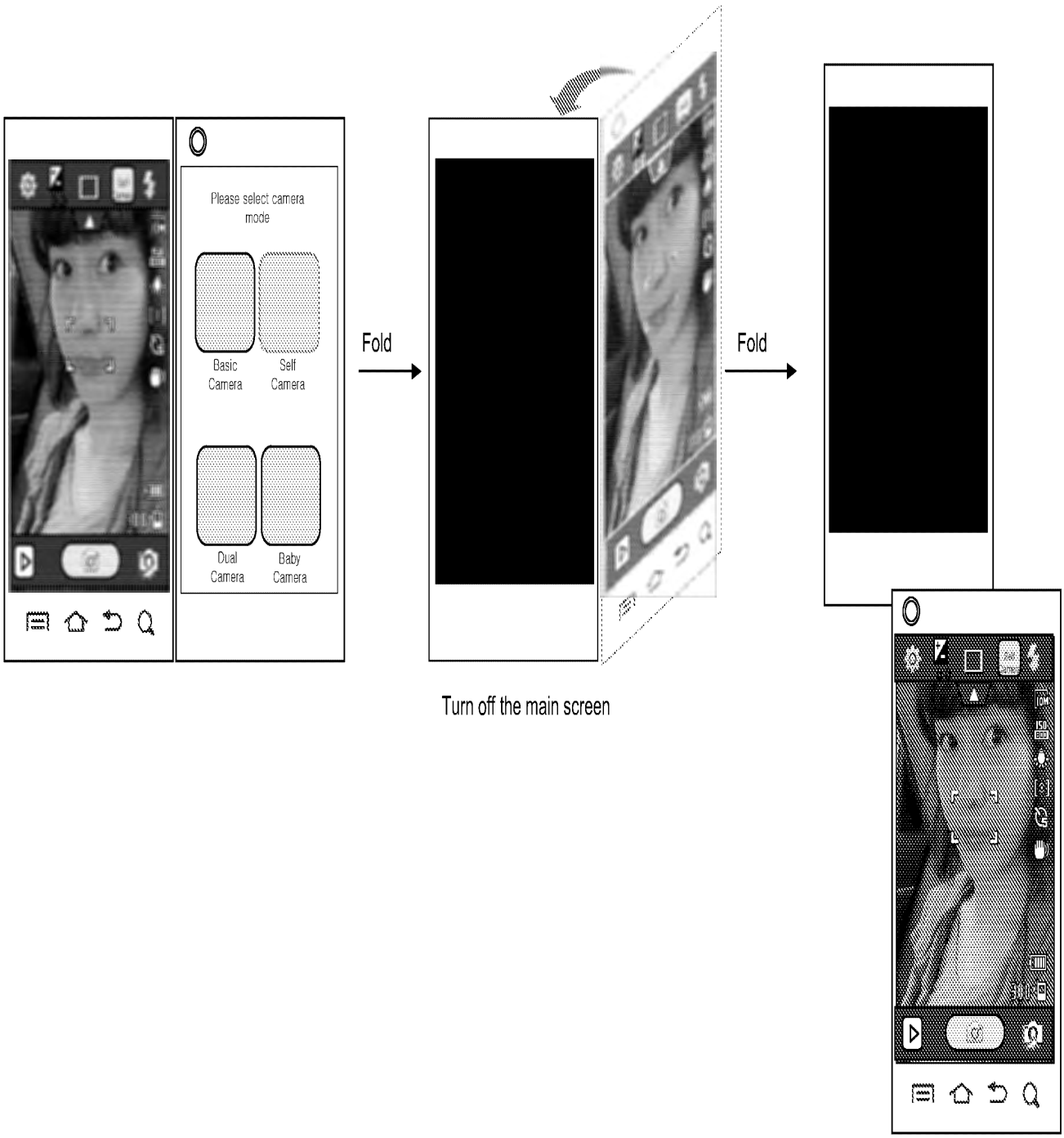
2.1 Folding Interaction : Basic Camera



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1. Key-screen

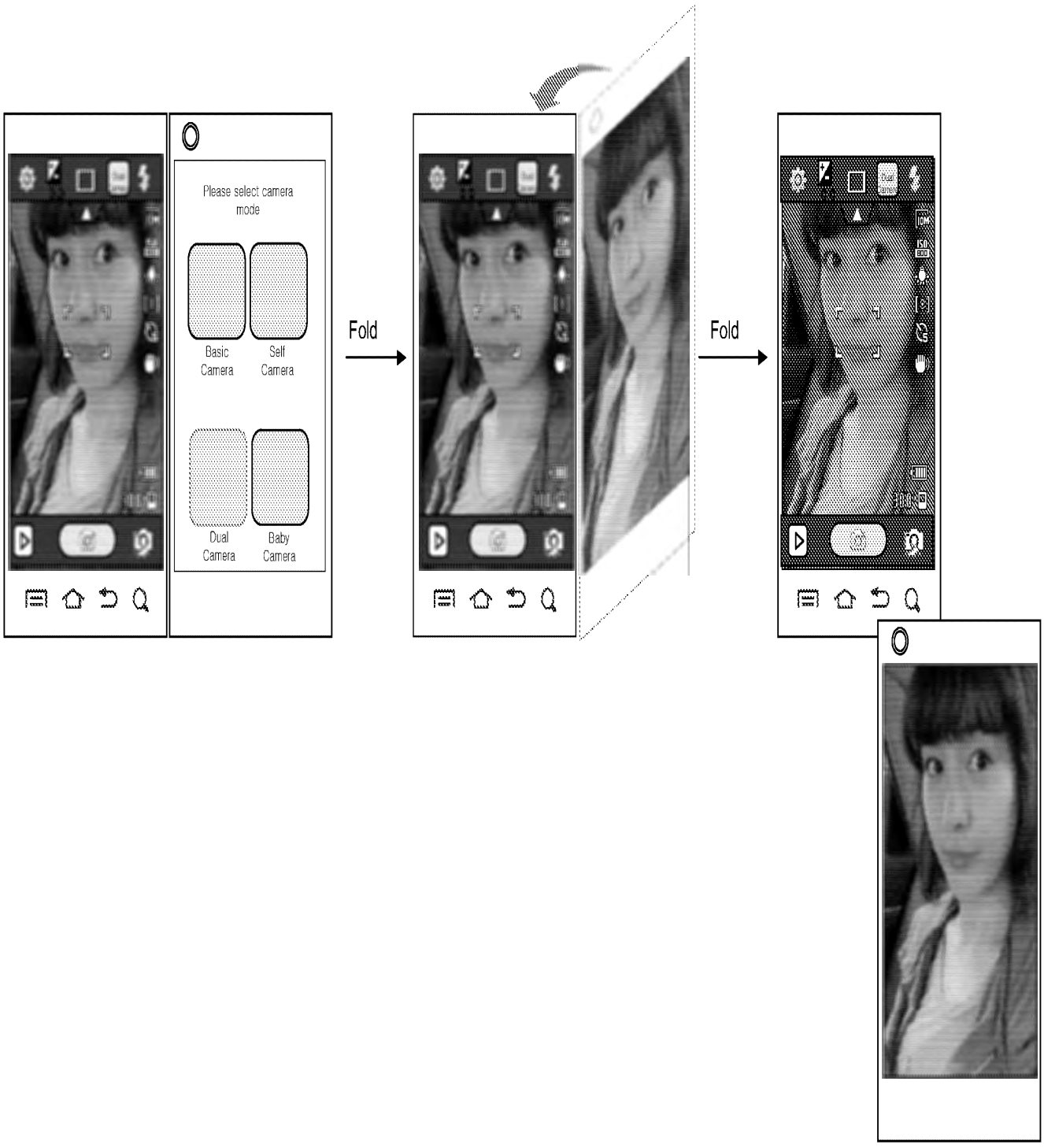
2.1 Folding Interaction : Self Camera



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1. Key-screen

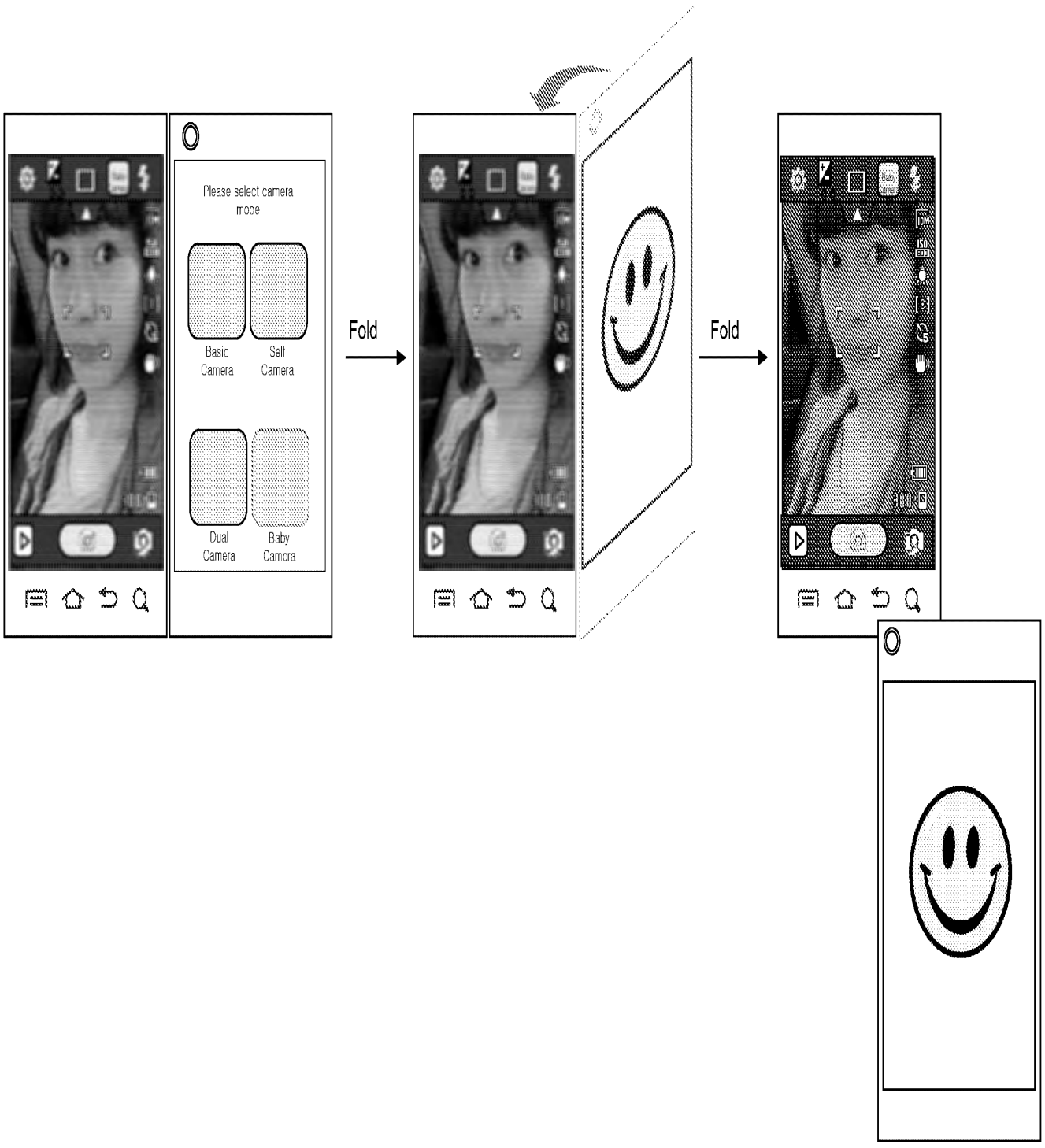
2.1 Folding Interaction : Dual Camera



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1. Key-screen

2.1 Folding Interaction : Baby Camera

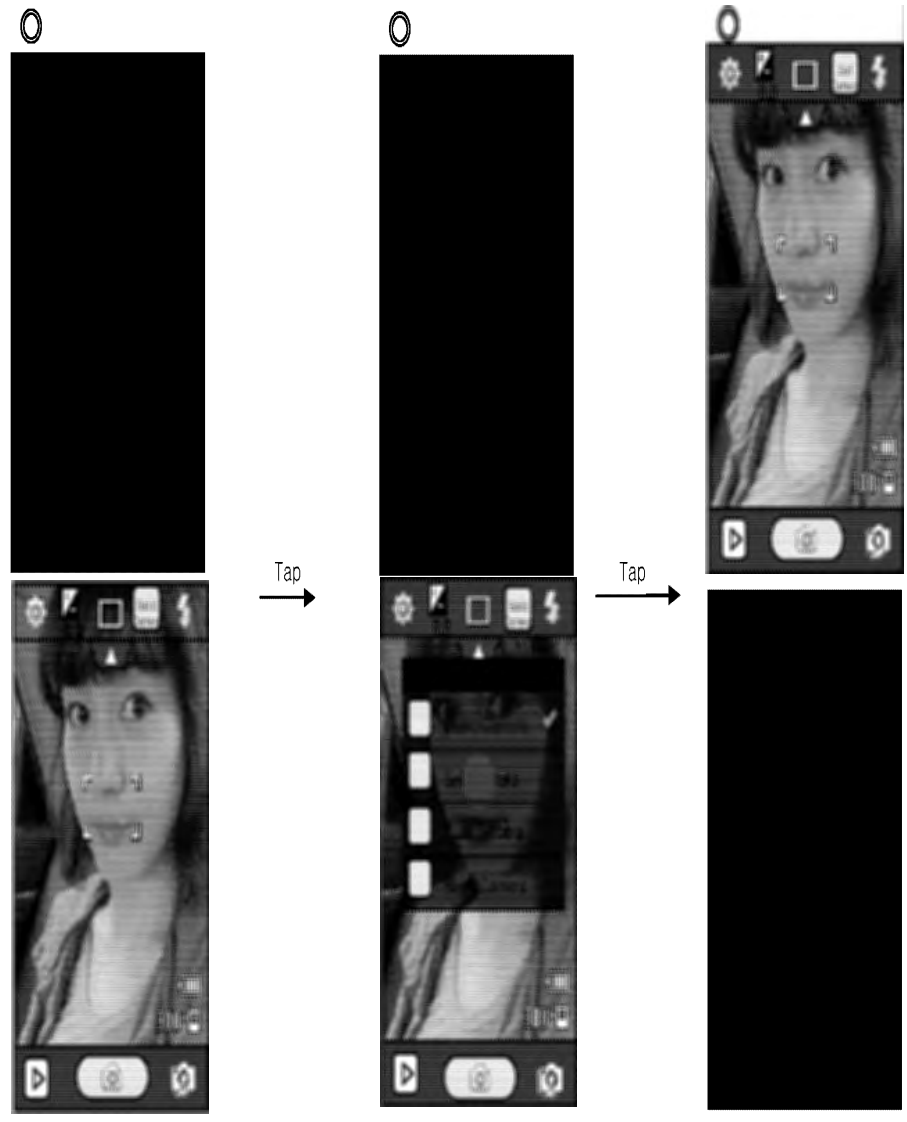


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1. Key-screen

2.2 Camera mode change : Hot key

<Sub screen>



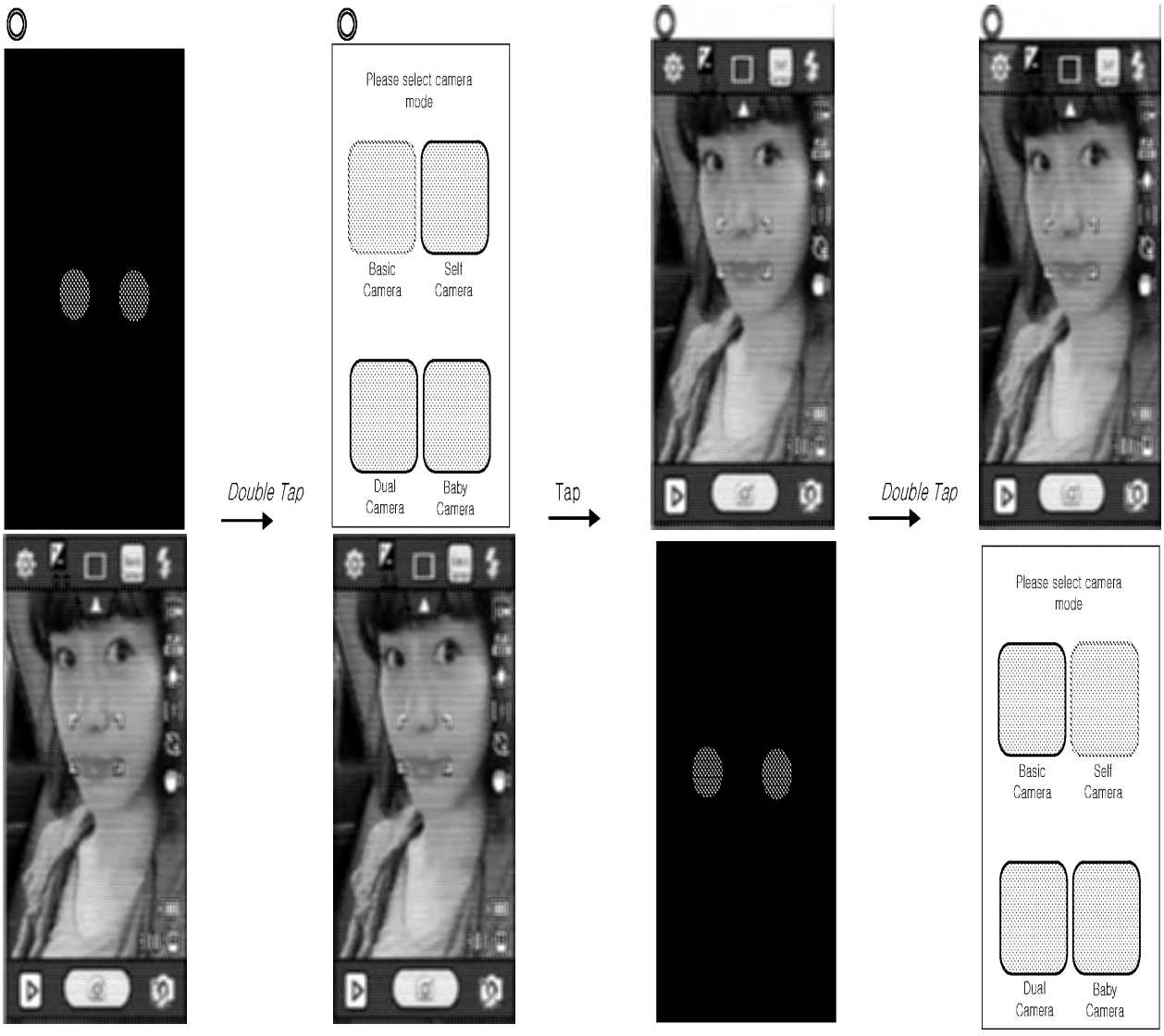
<Main screen>

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1. Key-screen

2.2 Camera mode change : Touch (TBD)

<Sub screen>

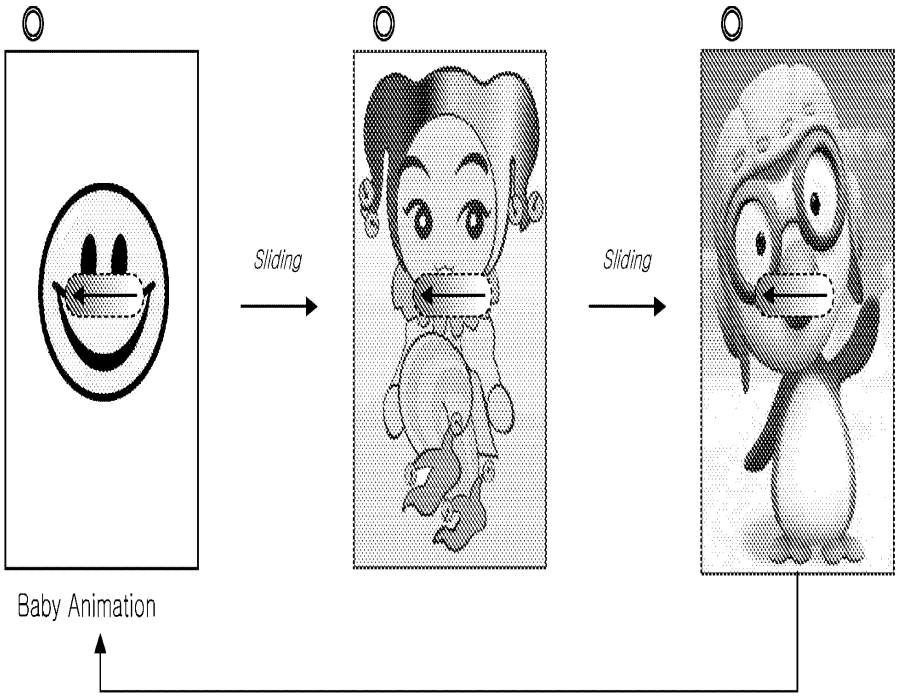


<Main screen>

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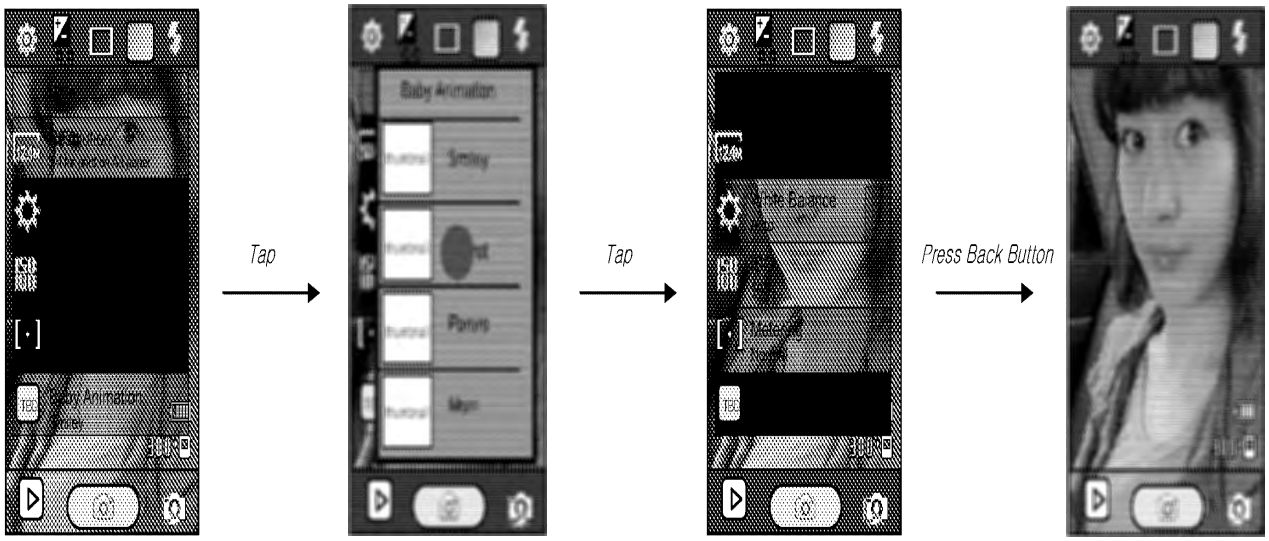
1. Key-screen

2.3 Baby Mode Animation



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2.3 Baby Mode Animation : function

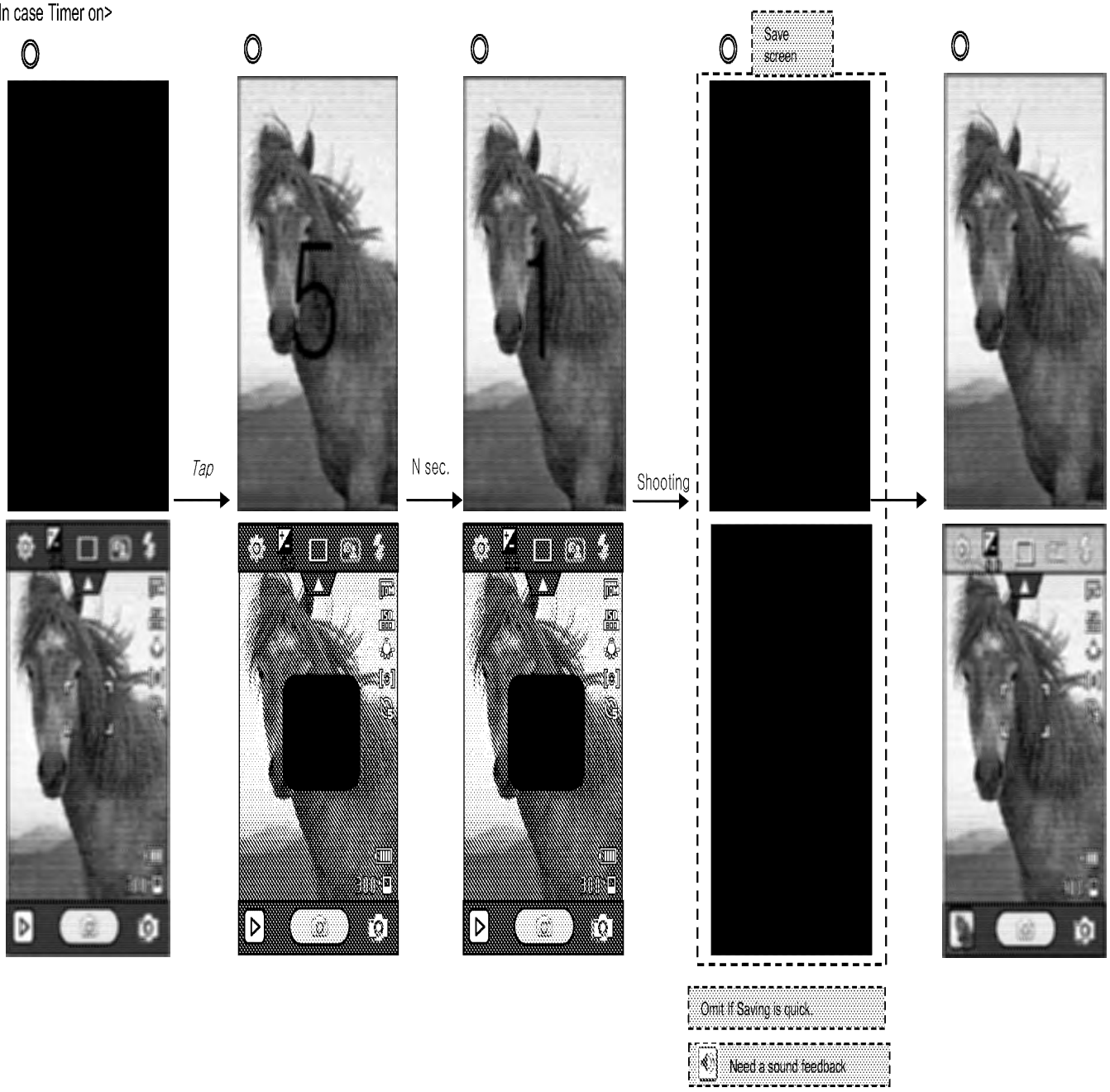


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2.4 Timer shooting

When Timer shooing, count & live view are displayed in sub-screen at all camera mode.

<In case Timer on>



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E-book Smart Index

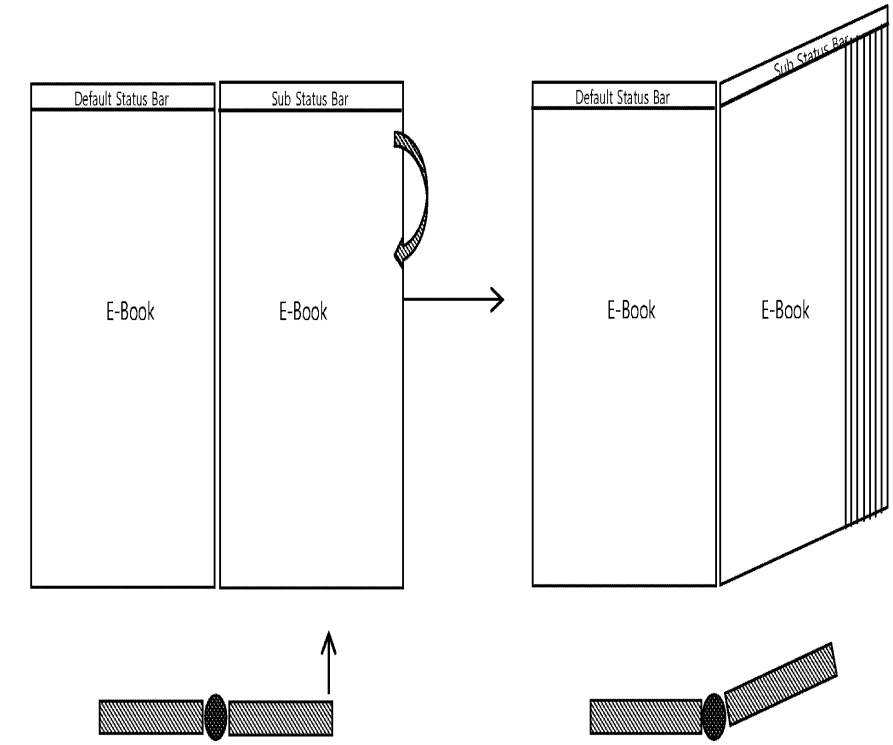
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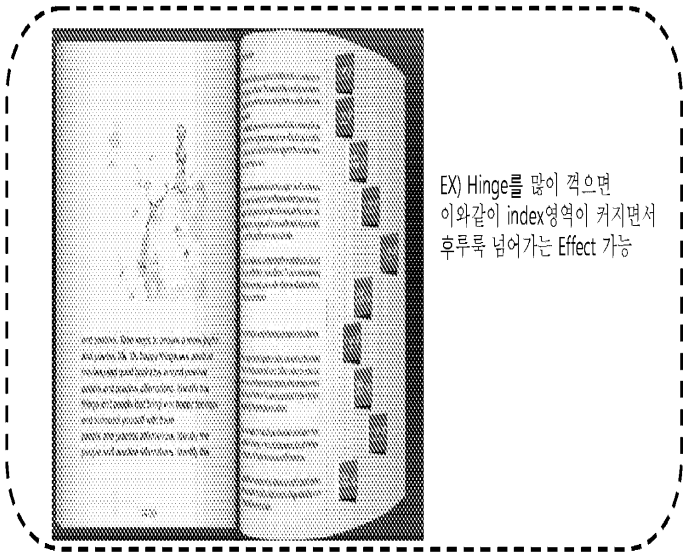
3. Smart Feature

3.1 – Smart Index

- **Smart Index**

- E-book, E-magazine에서 제공하는 기능
- 스크린을 기울이면 실제 책의 옆면이 보여지는 UI/GUI를 제공





EX) Hinge를 많이 꺽으면
이와같이 index영역이 커지면서
후루룩 넘어가는 Effect 가능

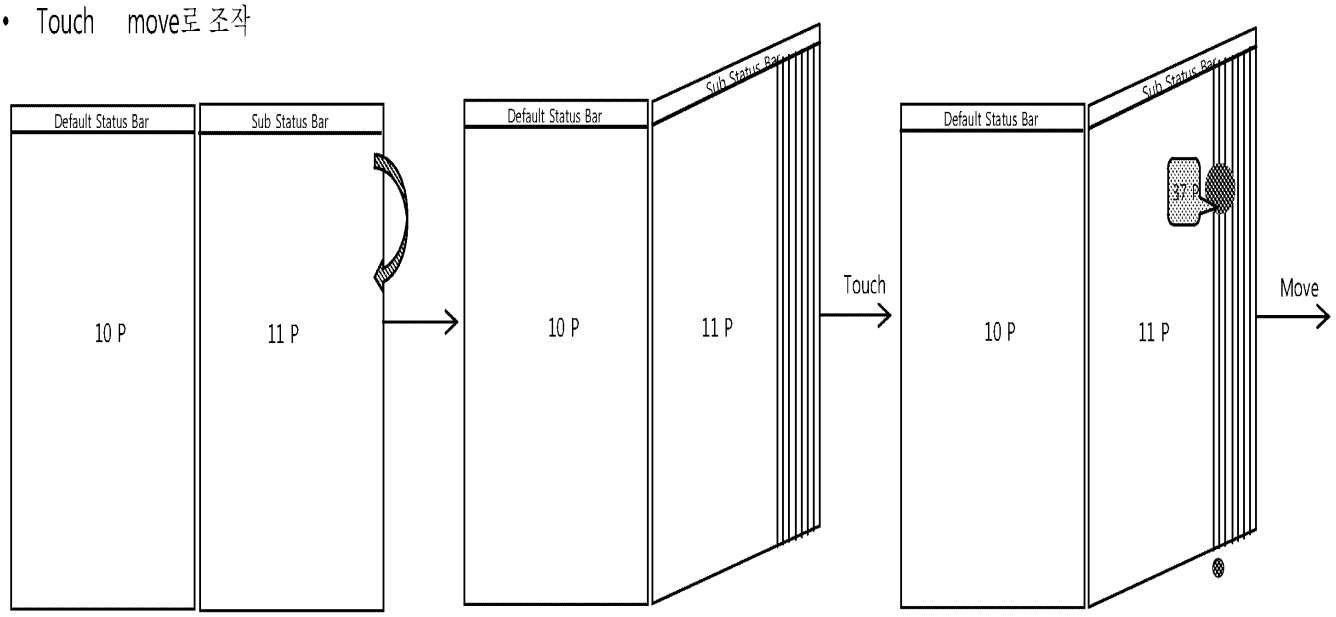
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3. Smart Feature

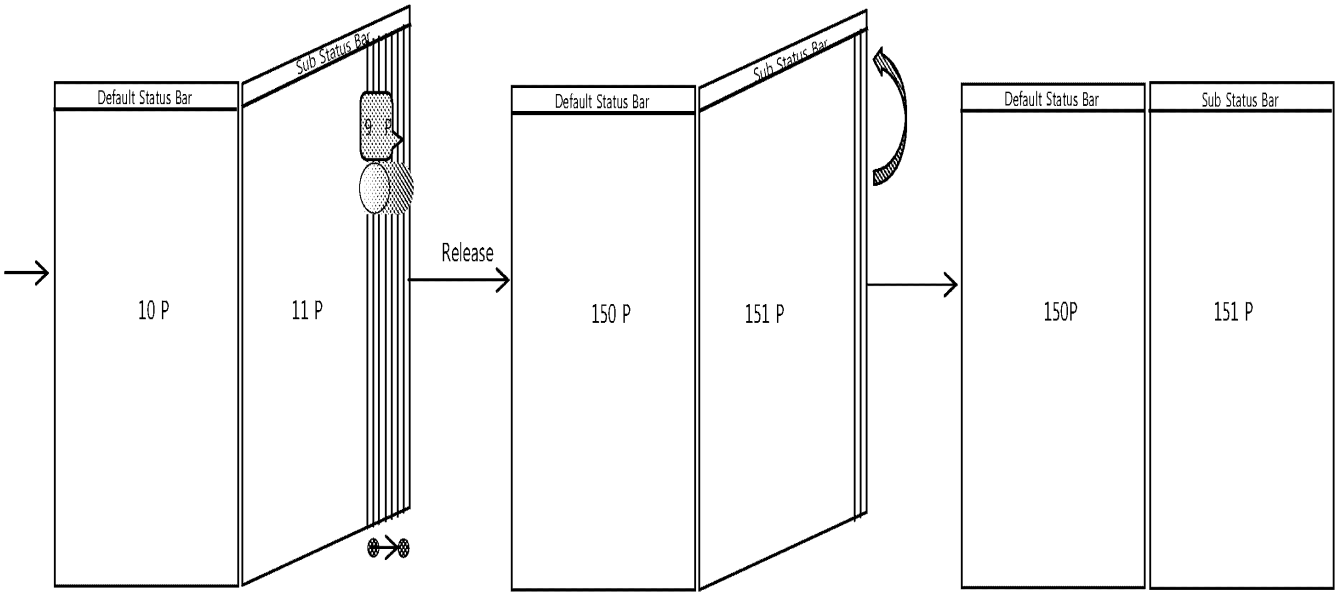
3.1 – Smart Index

- **Smart Index : Pa e 건너뛰기 기능**

- 원하는 page로의 빠른 이동
- Touch move로 조작



Touch 하면 해당 위치에 red line으로 위치 표시.
Page 는 buble로 작게 표기됨



Move 하면 red line이 이동되며
사용자가 원하는 위치로 조절 가능

Release 하면 해당 page로 이동

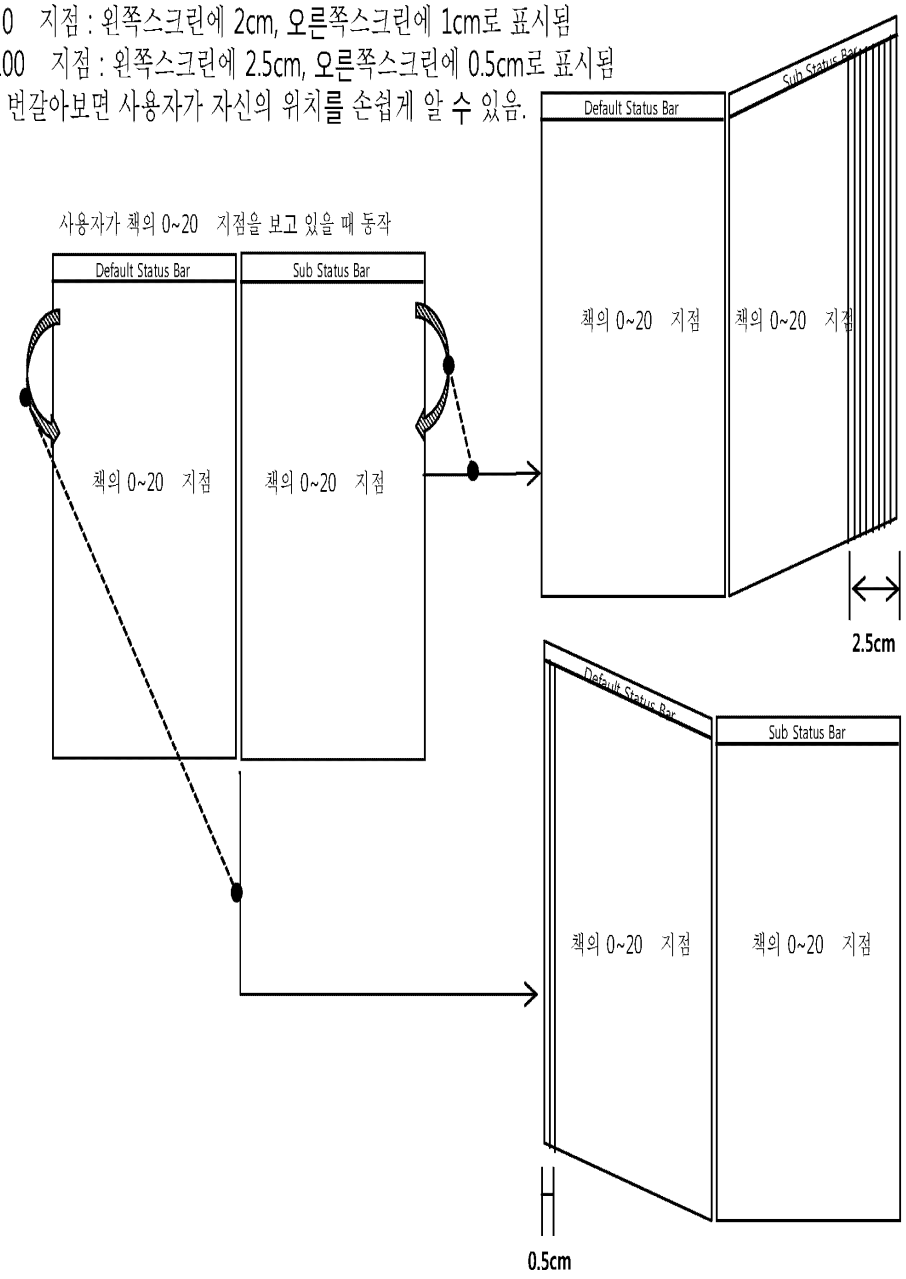
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3. Smart Feature

3.1 – Smart Index

- **Smart Index : Visualization (1)**

- 남은 page의 양을 두께로 시각 .
- 20 를 0.5cm에 대응시켜 0cm, 0.5cm, 1cm, 1.5cm, 2cm, 2.5cm 다섯 단계로 표현.
  -책의 20 ~40 지점 : 왼쪽스크린에 1cm, 오른쪽스크린에 2cm로 표시됨
  -책의 40 ~60 지점 : 왼쪽스크린에 1.5cm, 오른쪽스크린에 1.5cm로 표시됨
  -책의 60 ~ 0 지점 : 왼쪽스크린에 2cm, 오른쪽스크린에 1cm로 표시됨
  -책의 0 ~100 지점 : 왼쪽스크린에 2.5cm, 오른쪽스크린에 0.5cm로 표시됨
- 양쪽 index를 번갈아보면 사용자가 자신의 위치를 손쉽게 알 수 있음.

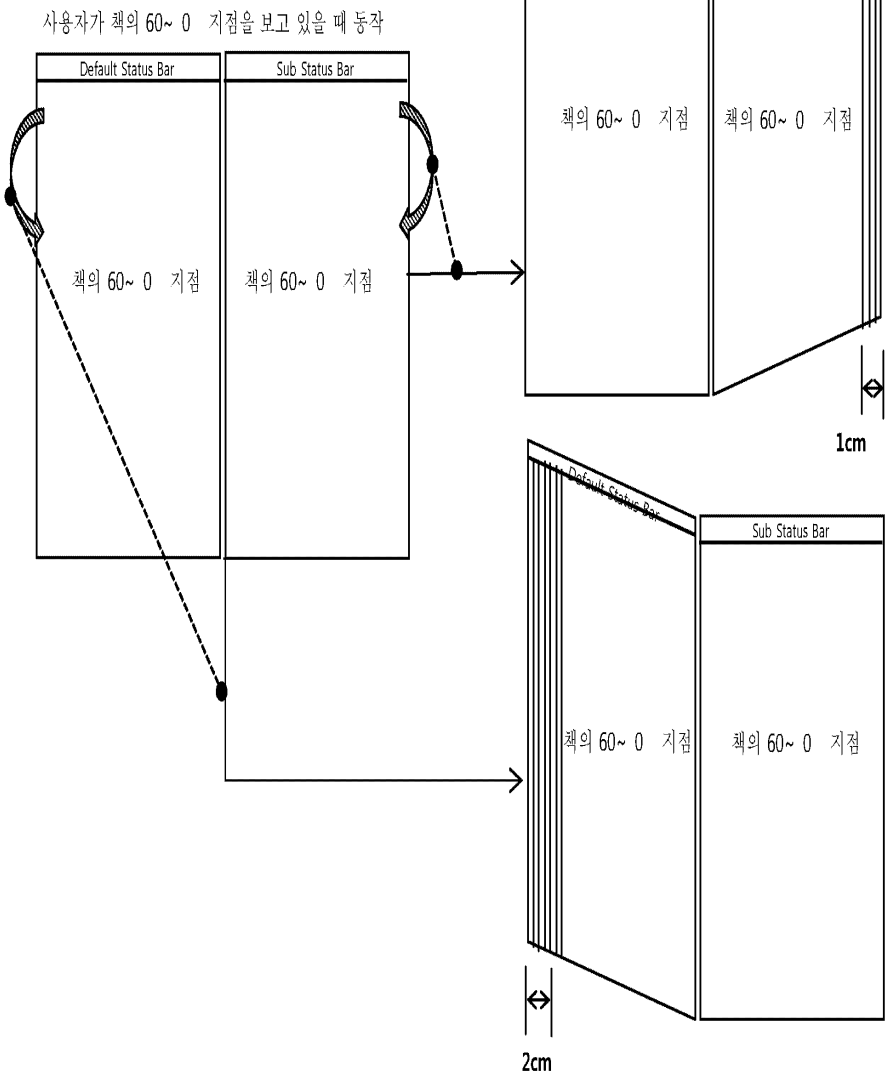


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정확한 cm는
아직 안정함

양쪽을 동시에
꺾을 수 있도록
지원할것인지.

- Smart Index : Visualization (2)



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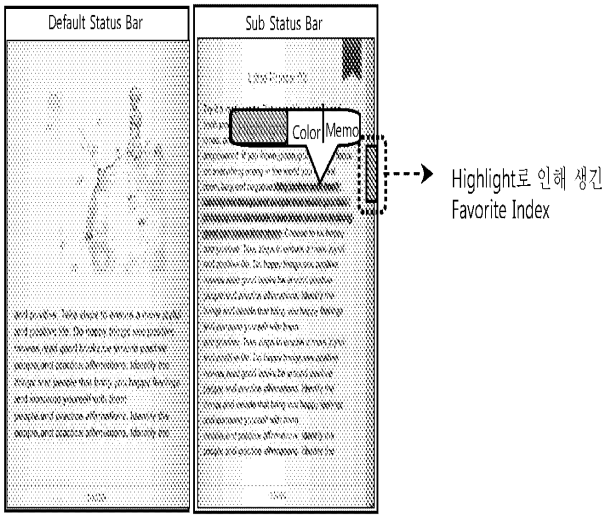
3. Smart Feature

3.1 – Smart Index

- **Favorite Index**

- Text를 Drag시, 해당 위치에 Bubble menu bar가 생김. 아래 세가지 메뉴로 구성.
  - Highlight : 밑줄 기능.
  - Color : highlight의 색상을 변경하는 기능.
  - Memo : 포스트-잍처럼 책 위에 메모지를 붙일 수 있는 기능.

- Highlight, Memo 가 생긴 Page에는 자동으로 바깥쪽에 Favorite Index가 붙음.
  - Highlight는 해당color와 같은 color를 주고, Memo는 항상 Yellow color.
  - Memo와, Line을 동시표기할경우 line color Tag위에 Yellow memo함께 표기.(next page참조)
  - 총 10개까지 붙일 수 있음.



Drag해야 menu가 뜨는 방식은

메모만 독자적으로 할 수 없는것 같은 문제??
혹은 하이라이트 끄면 어떻게 되는지 여부

Copy, paste 등은?

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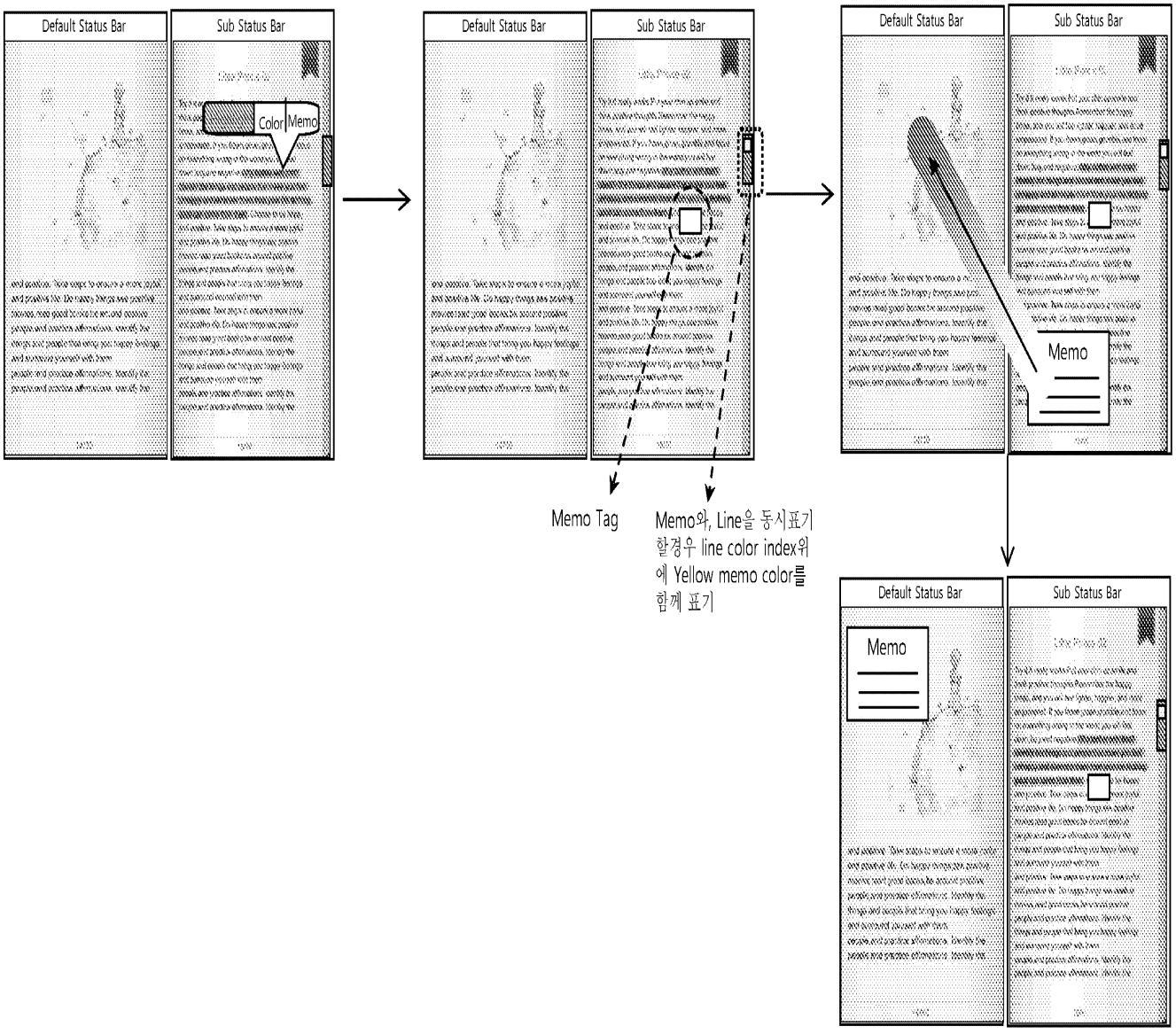
3. Smart Feature

3.1 – Smart Index

Index를 Tab 했을때도 동작할건지 여부.

- **ubble Menu ar : Memo**

- Bubble menu bar에서 Memo기능 선택 시, Highlight된 끝부분에 Memo tag가 아이콘 형식으로 붙음.
- Tag를 클릭 시, 메모지가 책 위에 붙음. Drag Drop으로 사용자가 메모지 붙이는 위치를 조정 가능.



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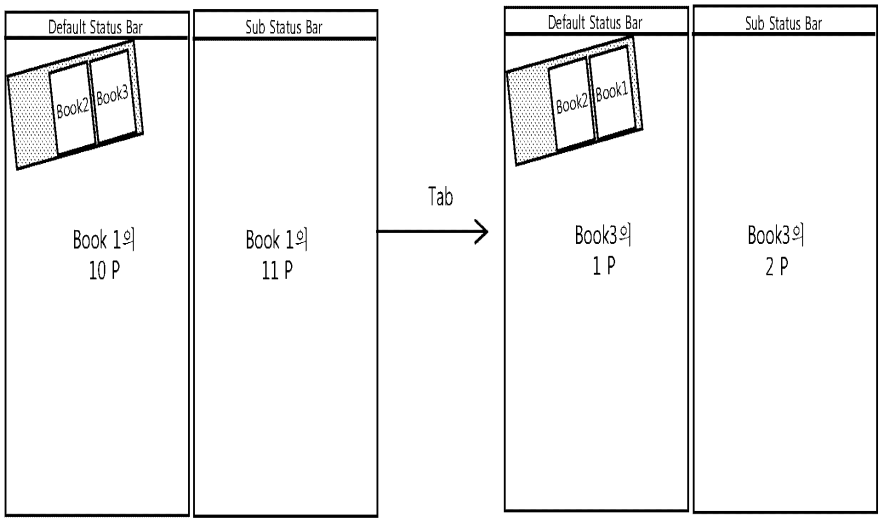
3. Smart Feature

3.1 – Smart Index

걔는 뭘 누르면 나오고
뭘 누르면 사라지는지 보충

- **Shortcut ook-List**

- 다음 읽을 책 목록 및, 즐겨찾기 해 놓은 책 목록 보여줄 수 있음.
- 필요 없을 시 숨김 가능.



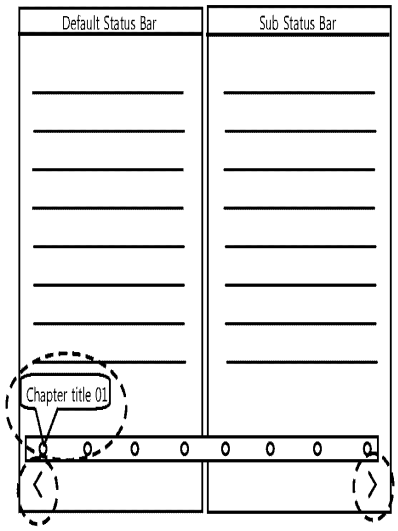
선택한 책으로 전환됨.
기본은 1p로, 보던 책이라면 읽던 페이지로 열림.

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버블의 동작정의 추가

- **Chapter (1안)**

- 하단에 Back, Next 버튼.
- 하단에 Chapter를 나타내는 bar가 있고 bubble로 chapter title 보여줌.



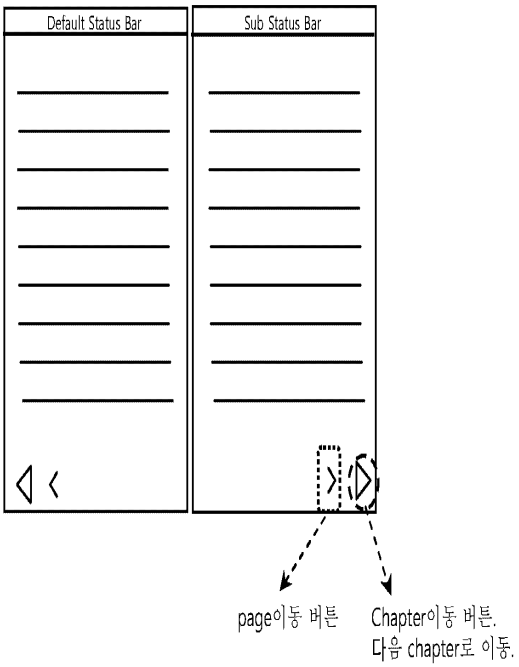
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3. Smart Feature

3.1 – Smart Index

- **Chapter (2안)**

- 하단에 Back, Next 버튼.
- Back, Next 버튼 옆에 한Chapter씩 이동할 수 있는 버튼 추가.



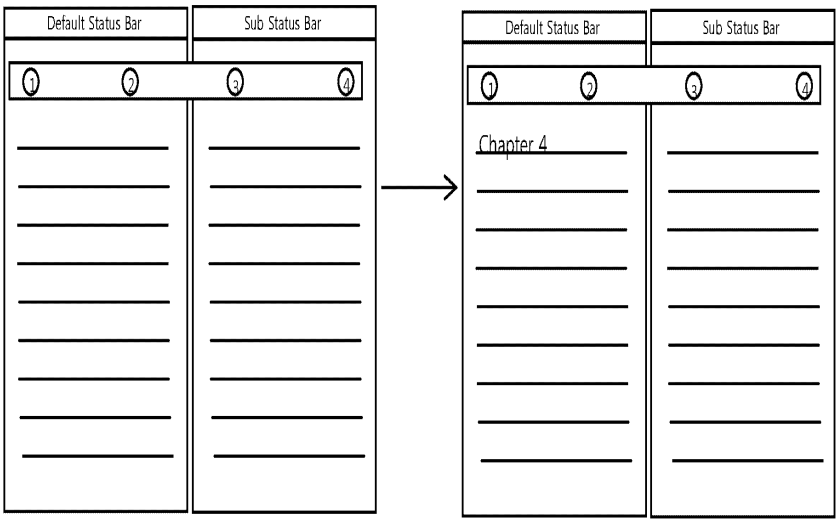
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Bar가 항상 나와 있도록 할것인지?

현재 챕터위치는 표기해줄 것인지

- **Chapter (3안)**

• 상단에 Chapter bar를 두고, 해당chapter 클릭 시 바로 이동.



총 4개의 Chapter중
현재 Chapter 2 라고 가정

Chapter 4 로 바로 이동

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Dual Display Basic Interaction UI Guideline
for Android

V.1.6

December 10, 2010

Contact Point :
Hyunjin Kim (truthkim@samsung.com) +82-10-8908-4559
Juyoun Lee (florial.lee@samsung.com) +82-10-4339-0026
Joonkyu Seo (joonkyu.seo@samsung.com) +82-10-2431-1289
Hyunjeong Song (songah.song@samsung.com) +82-2-2255-5563
Dongseok Ryu (dongseok.ryu@samsung.com) +82-2-2255-5424

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Document History

No.	Sent	Version	File Name	Contents
01	November 5, 2010	v.0.9	[Duplex_Android] Basic Interaction_v.0.9_20101105	Document Origination
02	November 8, 2010	v.1.0	[Duplex_Android] Basic Interaction_v.1.0_20101108	
03	November 26, 2010	v.1.5	[Duplex_Android] Basic Interaction_v.1.5_20101126	Updated by SERI comments (Multi-tasking, Gesture Mode change, Basic Interaction between 2 Screens, Text Input)
04	December 10, 2010	v.1.6	[Duplex_Android] Basic Interaction_v.1.6_20101210	Screen Layout Updated (Split-mode(A/B), Expand-mode(A+), Dual-zoom(A++))

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Notation Guide

Comments Style

Principle Blahblahblahblah	**Spec** Blahblahblahblah	Blahblahblahblah	**Comment** Blahblahblahblah
A definition of UI principle. Definition of comments that can be fundamental and exceptional conditions, Including the definition about the vocabulary.	Spec Description	Description for situation change in scenario and condition & Default Value	Samsung UX Team Comment

Line Style

Primary Flow	Secondary Flow	Defining functions

Flow Iconography

	
Decision Point	End Flow: Idle Screen

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Document Flag

Document Flag		
v.xx Added BlahblahblahBlahblahblah	v.xx Updated BlahblahblahBlahblahblah	v.xx Added BlahblahblahBlahblahblah v.xx Updated BlahblahblahBlahblahblah
Added page	Updated page	Keep Previous History

Document Flag		
TBD	v.xx Deleted : Blahblahblah	See Android Guideline
TBD functions	Deleted functions	The rule is same with the single android phone.

Document Flag	
Workflows	Workflows
AT&T MAXD UE flows	Samsung UE flows

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1.2 - Portrait & Landscape Mode Change Rule
1.3 - Basic Rule of Mode Change (Portrait)
1.3.1 - 0°→ 60° → 180° Basic Flow
1.3.2 - 180°→60° → 0° Basic Flow
1.4 - Basic Rule of Mode Change (Landscape)
1.4.1 - 0°→ 60° → 180° Basic Flow
1.4.2 - 180°→60° → 0° Basic Flow

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2.2 - Page Navigation
2.3 - Application Execution
2.4 - Portrait view to Landscape view
2.5 - Edit
2.6 - Add Application Shortcut

3. Application Screen Interaction
3.1 - Portrait view to Landscape view
3.2 - Edit
3.3 - Add Application Shortcut

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4.3 - Basic Flow

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5.2 - Basic Flow | Split-mode to Expand-mode
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6. Basic Key Interaction
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9.1 - Definition of Unlock (Hold Key Interaction)
9.2 - 0° / 60° / 180° Unlock Basic Flow

10. Basic Interaction between 2 screens
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11. Text Input
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11.2 - Basic Flow

12. Interruption
12.1 - New Notification
12.2 - Incoming Call
12.3 - Event Notification

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Definition of Mode

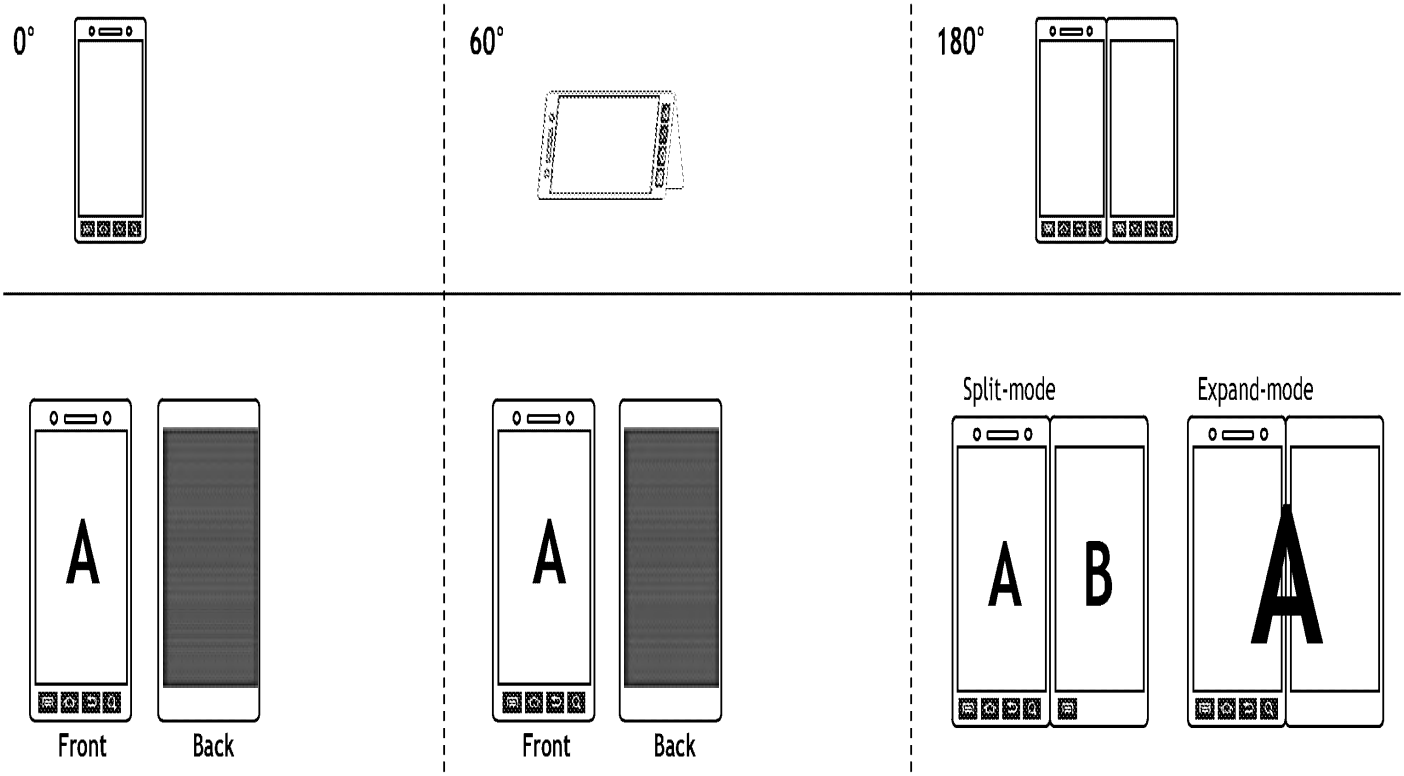
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1. Definition of Mode

1.1 – 3 Mode Definition (0˚, 60˚, 180˚)

v.1.6 Updated
Screen Layout mode changed

- 3 Mode Definition



When the screens folded into 0˚, display main screen only, and turn off back screen.

In some applications, user can turn on back screen by option menu.

When the screens folded out into 60˚, display main screen only, and turn off back screen.

In some applications, user can turn on back screen by option menu.

When the screens folded out into 180˚, display two screens with Split-mode, or Expand-mode layout.

Two screen layout is explained in detail in the '2.1 Basic Screen Layout' section.

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1. Definition of Mode

1.2 – Portrait & Landscape Mode Change Rule

- **Portrait & Landscape Mode Change Rule**

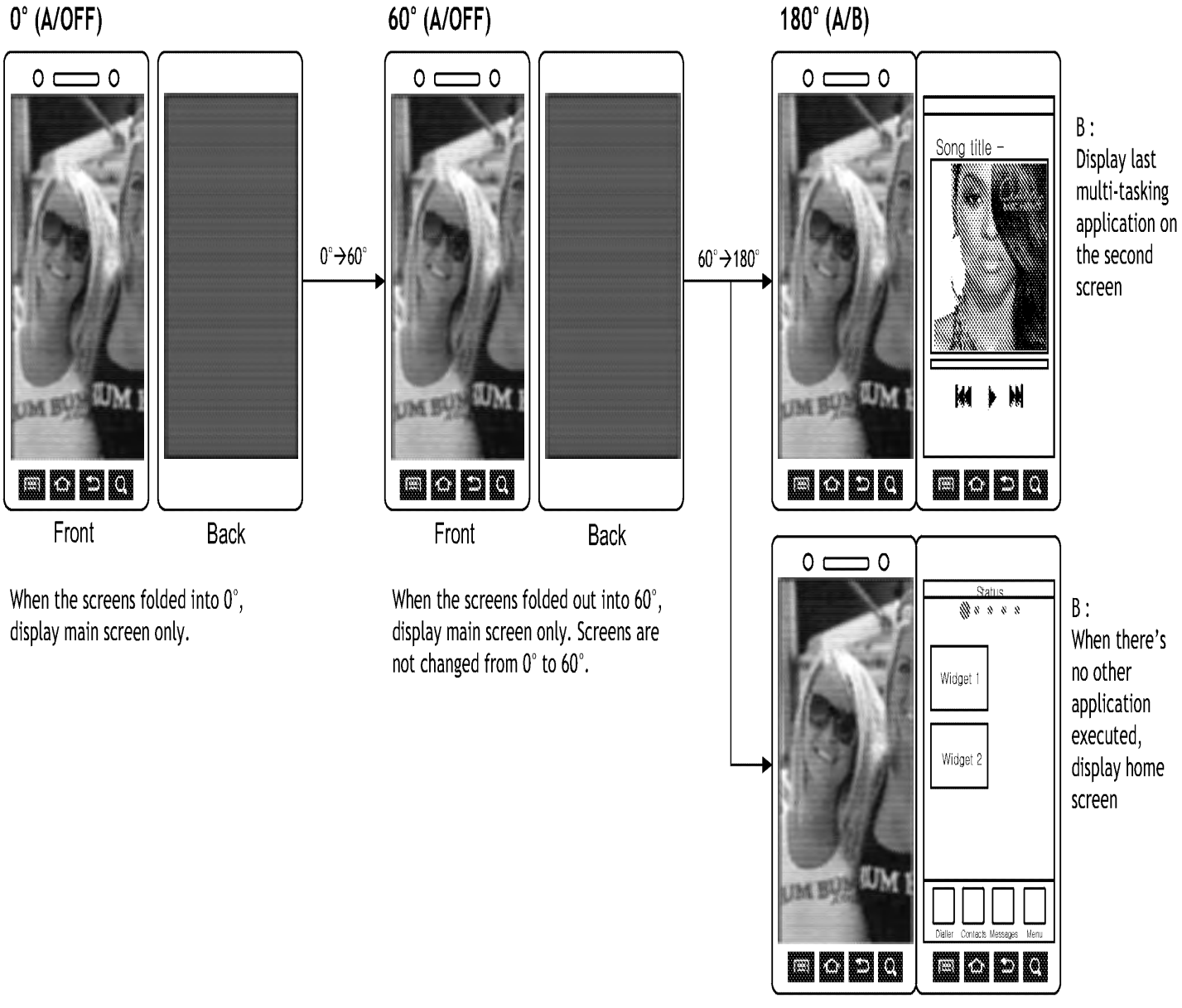
- Portrait & Landscape Mode Change Rule follows Single screen interaction rule.

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1. Definition of Mode

1.3 – Basic Rule of Mode Change (Portrait)

● 0° → 60° → 180° Basic Flow



When the screens folded into 0°, display main screen only.

When the screens folded out into 60°, display main screen only. Screens are not changed from 0° to 60°.

B : Display last multi-tasking application on the second screen

B : When there's no other application executed, display home screen

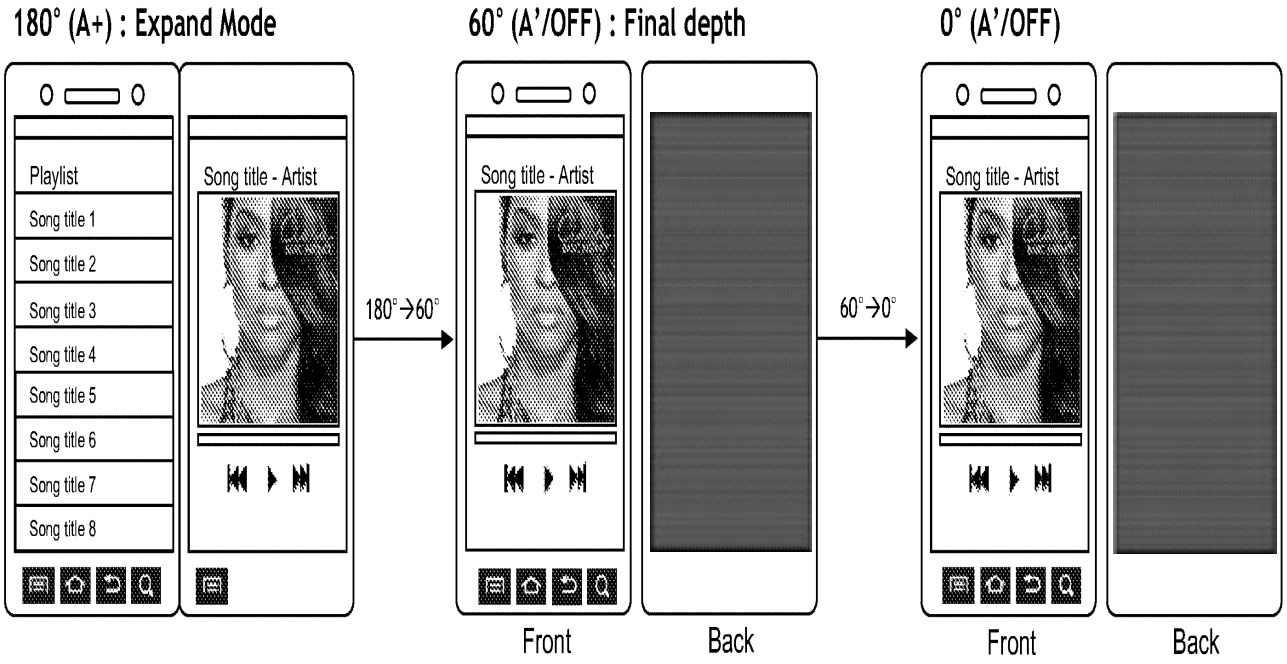
When the screens folded out into 180°, display Split-mode(A/B) layout on the two screens.

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1. Definition of Mode

1.3 – Basic Rule of Mode Change (Portrait)

● 180° → 60° → 0° Basic Flow (1/2)



Front : final depth screen of Expand-mode application
Back : OFF

When the screens folded into 60°, display final depth screen of Expand-mode application on the main screen, and turn off back screen.

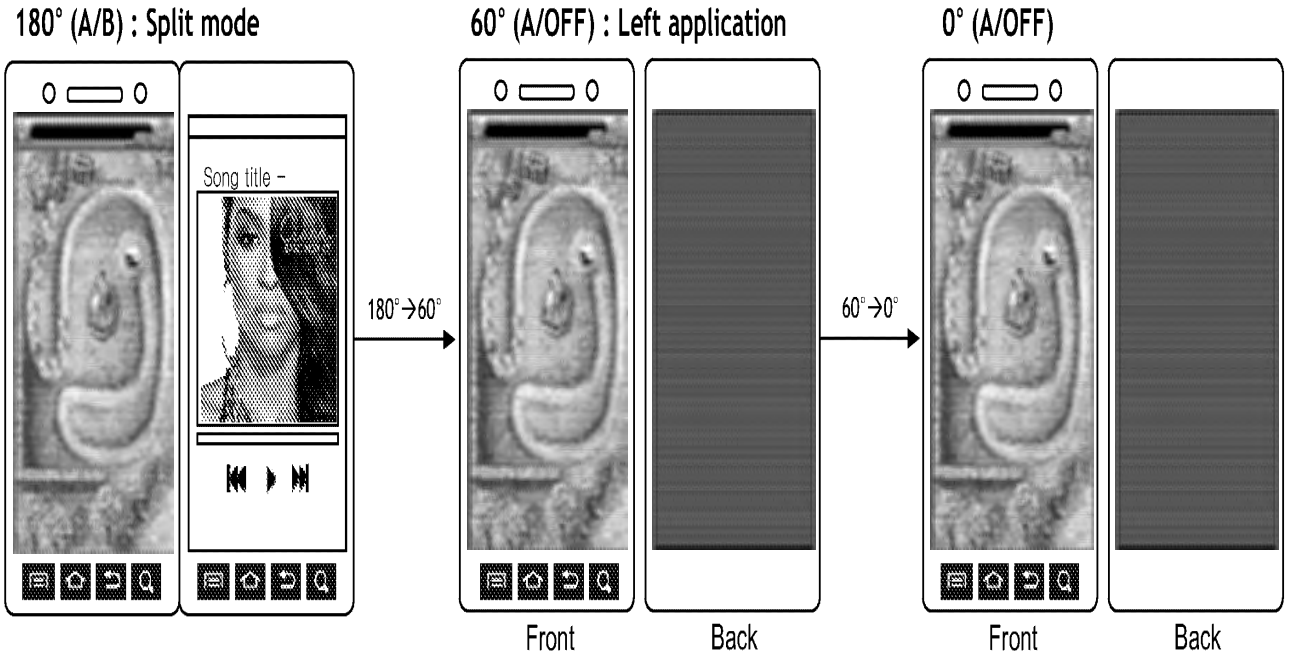
When the screens folded into 0°, display final depth screen of Expand-mode application on the main screen, and turn off back screen. Screens are not changed from 60° to 0°.

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1. Definition of Mode

1.3 – Basic Rule of Mode Change (Portrait)

- 180° → 60° → 0° Basic Flow (2/2)



Front : Left application (application on the main screen)
Back : OFF

When the screens folded into 60°, display an application on the main screen (left application) only, and turn off back screen.

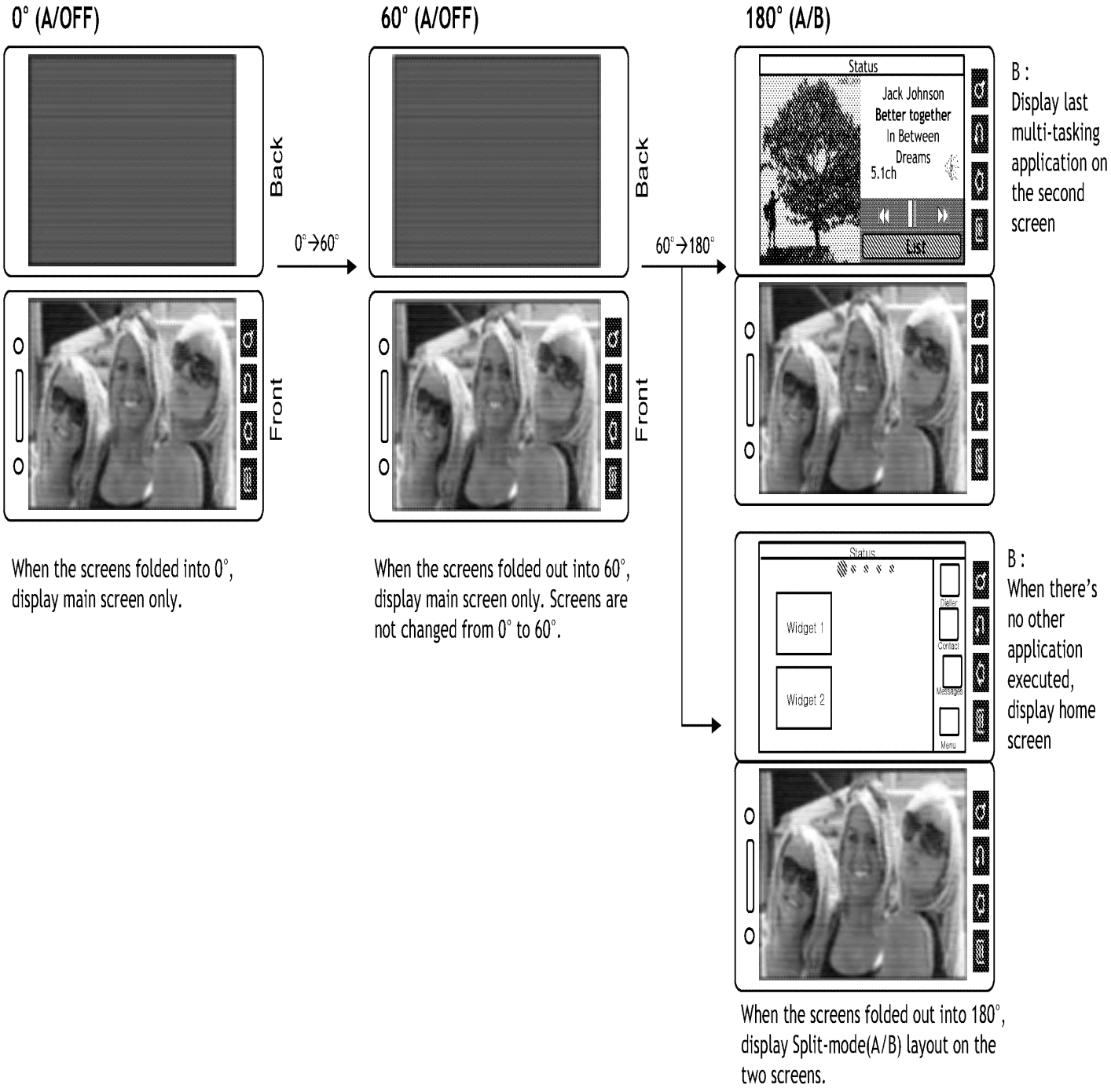
When the screens folded into 0°, display an application on the main screen (left application) only, and turn off back screen.
Screens are not changed from 60° to 0°.

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1. Definition of Mode

1.4 – Basic Rule of Mode Change (Landscape)

● 0° → 60° → 180° Basic Flow (Landscape 90)



When the screens folded into 0°, display main screen only.

When the screens folded out into 60°, display main screen only. Screens are not changed from 0° to 60°.

B : Display last multi-tasking application on the second screen

B : When there's no other application executed, display home screen

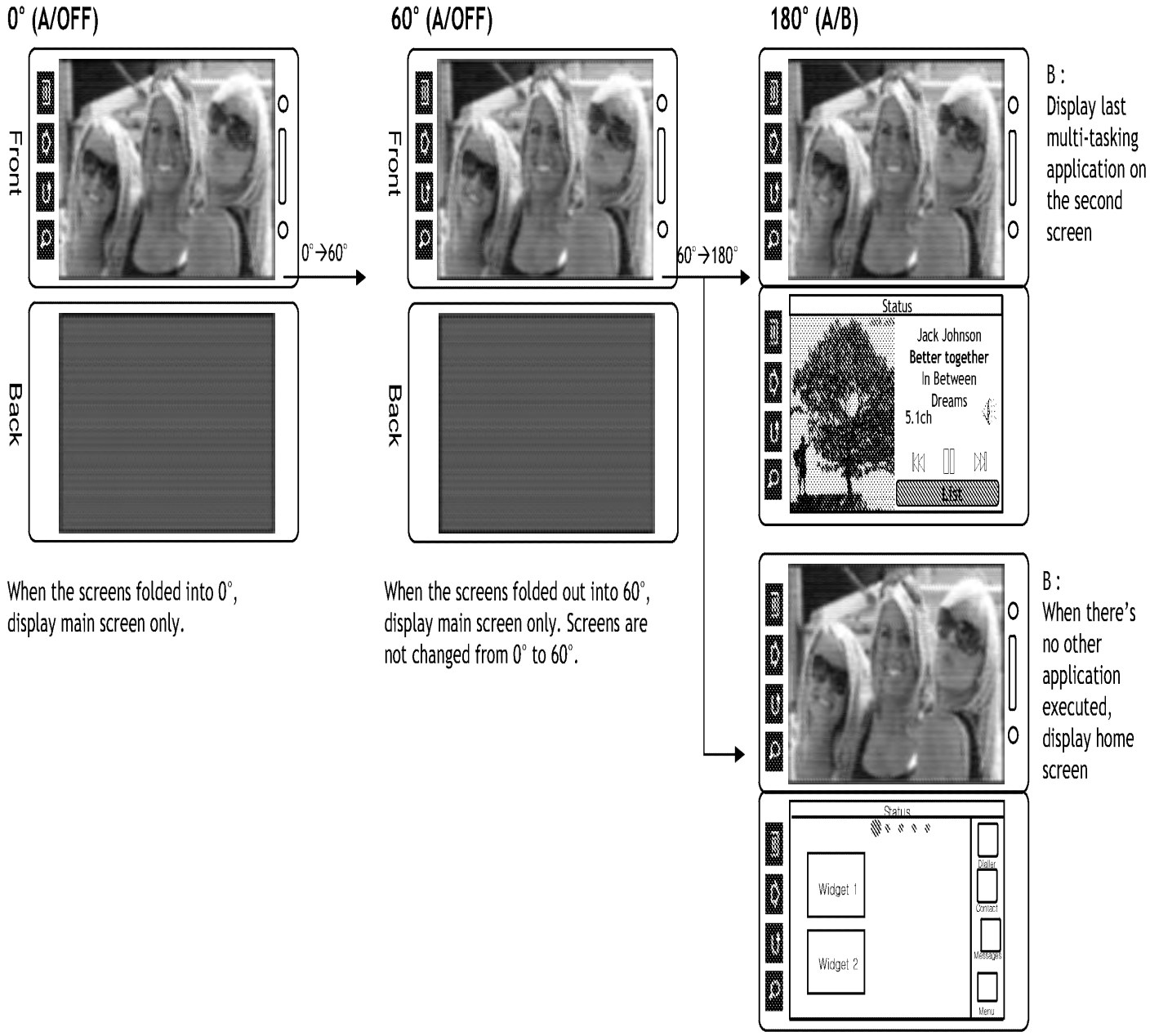
When the screens folded out into 180°, display Split-mode(A/B) layout on the two screens.

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1. Definition of Mode

1.4 – Basic Rule of Mode Change (Landscape 2)

● 0° → 60° → 180° Basic Flow (Landscape -90)



When the screens folded into 0°, display main screen only.

When the screens folded out into 60°, display main screen only. Screens are not changed from 0° to 60°.

B : Display last multi-tasking application on the second screen

B : When there's no other application executed, display home screen

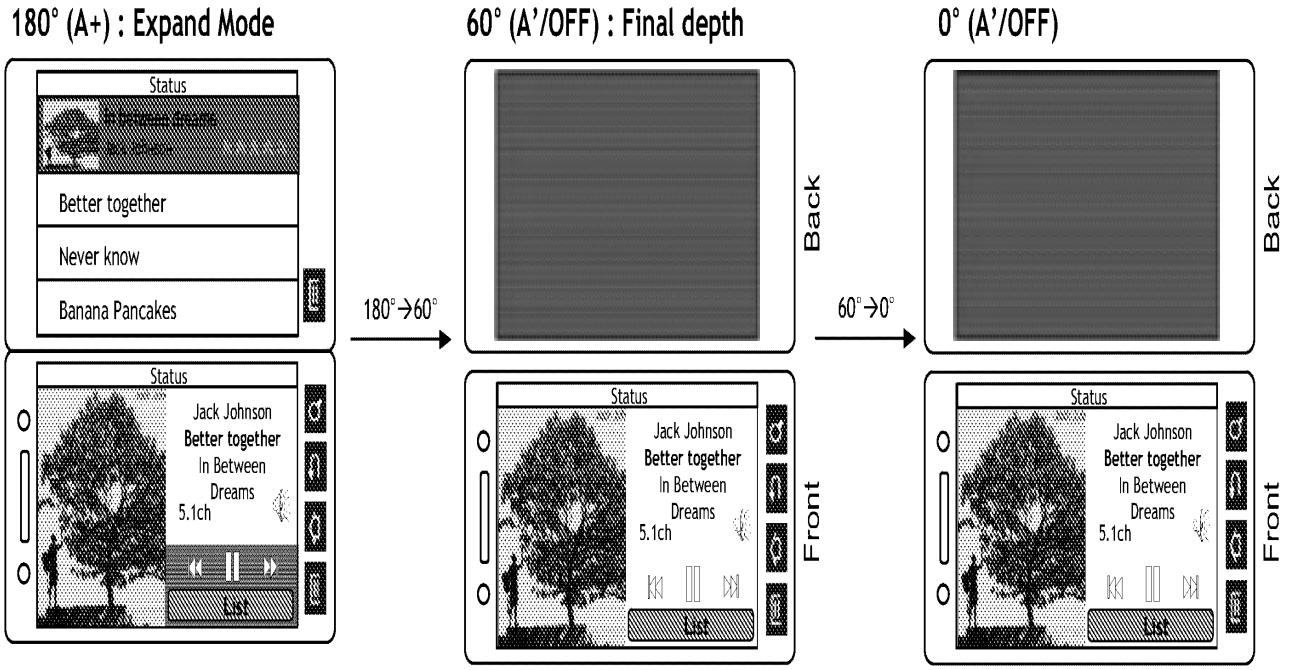
When the screens folded out into 180°, display Split-mode(A/B) layout on the two screens.

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1. Definition of Mode

1.4 – Basic Rule of Mode Change (Landscape)

- 180° → 60° → 0° Basic Flow (1/2)



Front : final depth screen of Expand-mode application
Back : OFF

When the screens folded into 60°, display final depth screen of Expand-mode application on the main screen, and turn off back screen.

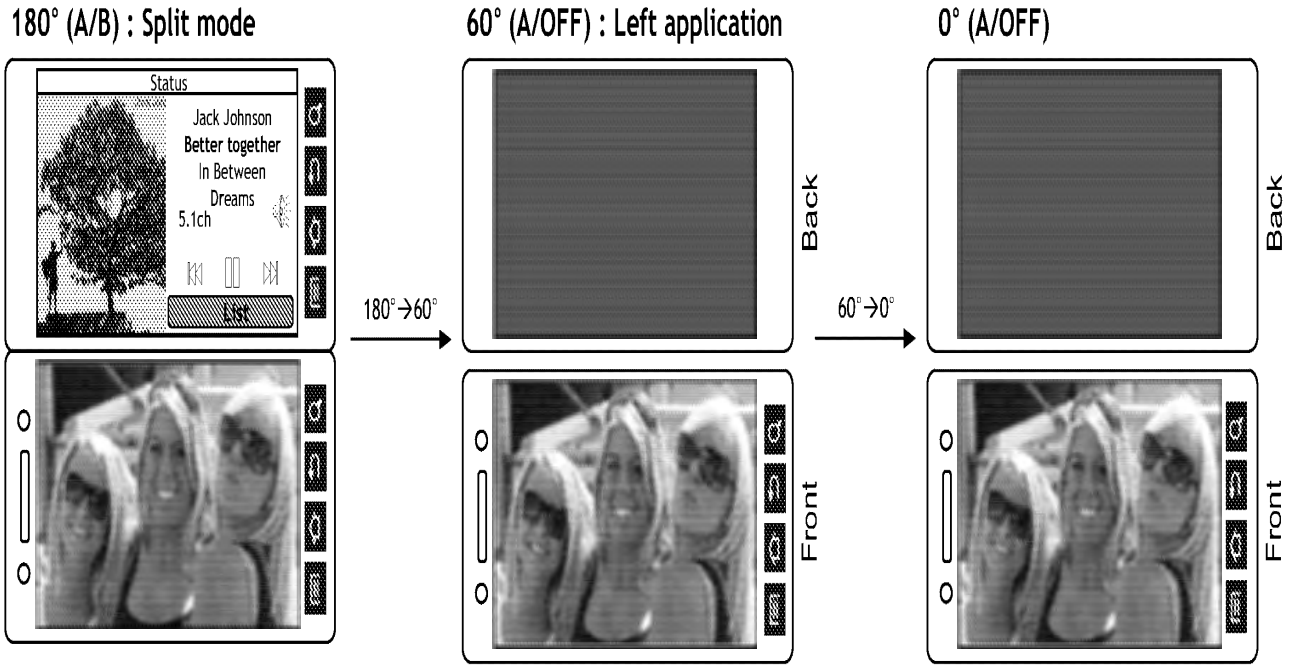
When the screens folded into 0°, display final depth screen of Expand-mode application on the main screen, and turn off back screen. Screens are not changed from 60° to 0°.

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1. Definition of Mode

1.4 – Basic Rule of Mode Change (Landscape)

- 180° → 60° → 0° Basic Flow (2/2)



Front : Left application (application on the main screen)
Back : OFF

When the screens folded into 60°,
display an application on the main screen (left application) only, and turn off back screen.

When the screens folded into 0°,
display an application on the main screen (left application) only, and turn off back screen.
Screens are not changed from 60° to 0°.

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Home Screen

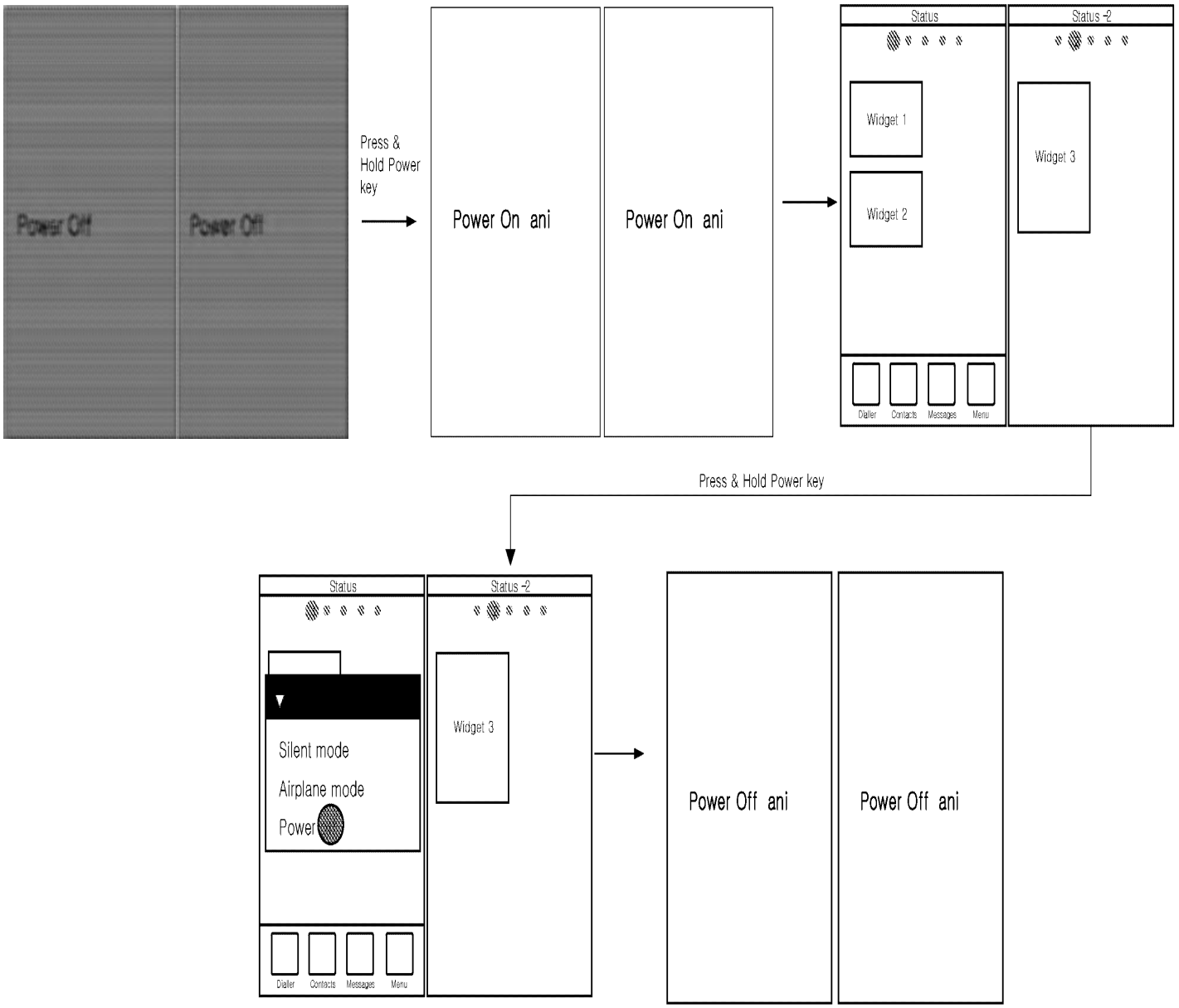
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2. Home Screen

2.1 Overview

Home screen

• Press & hold POWER On ↔ Off



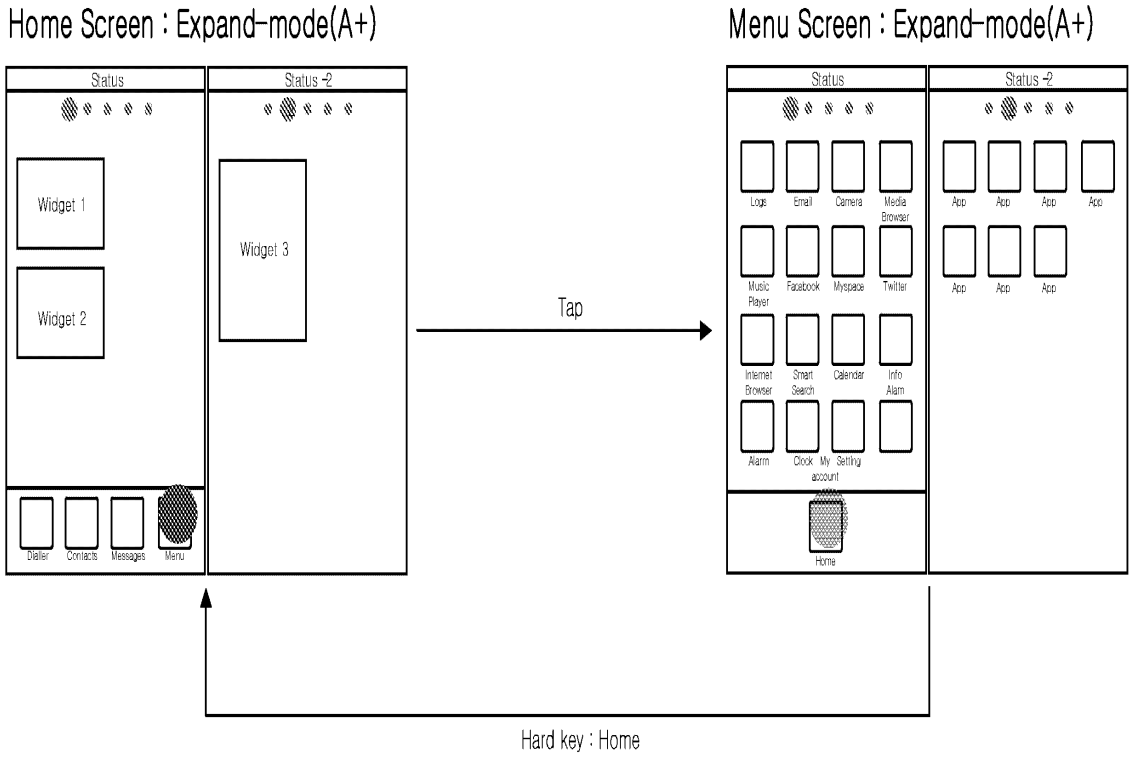
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2. Home Screen

2.1 Overview

v.1.6 Updated
Screen Layout mode Updated.

• Expand-mode(A+) Home screen / Expand-mode(A+) Application Menu Screen



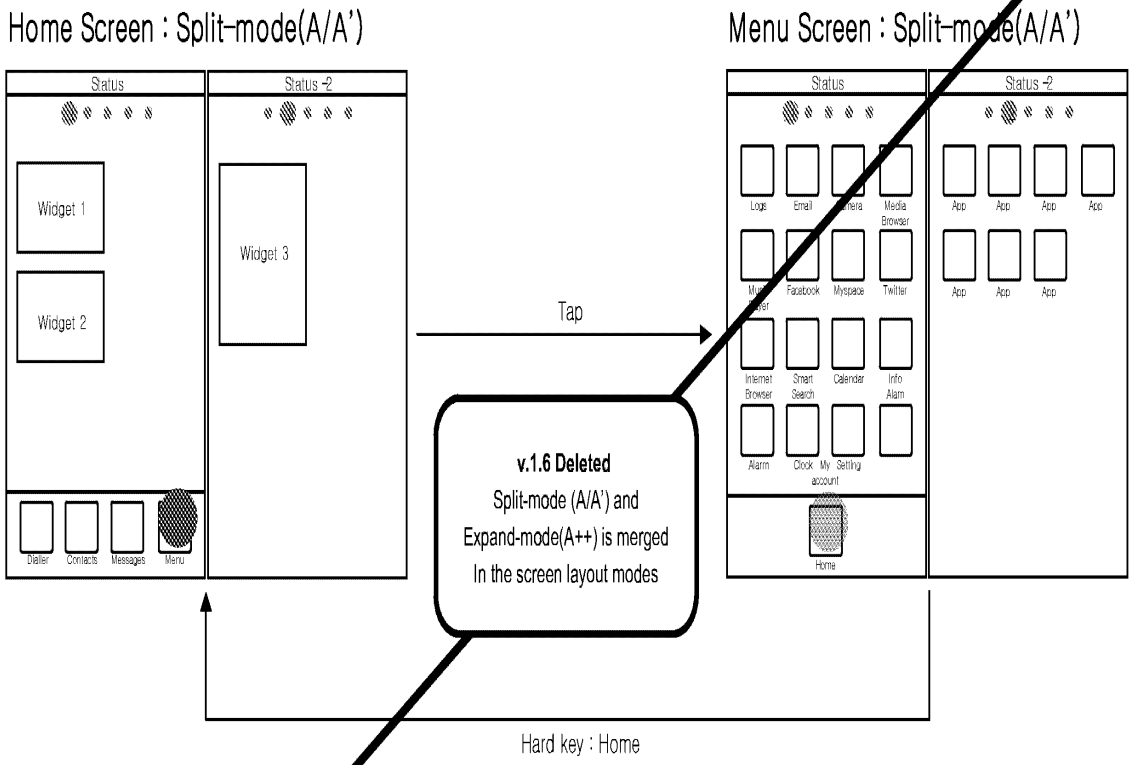
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2. Home Screen

2.1 Overview

v.1.5 Added
Layout for Split-mode Home screen Added.

• Split-mode(A/A') Home screen / Split-mode(A/A') Application Menu Screen

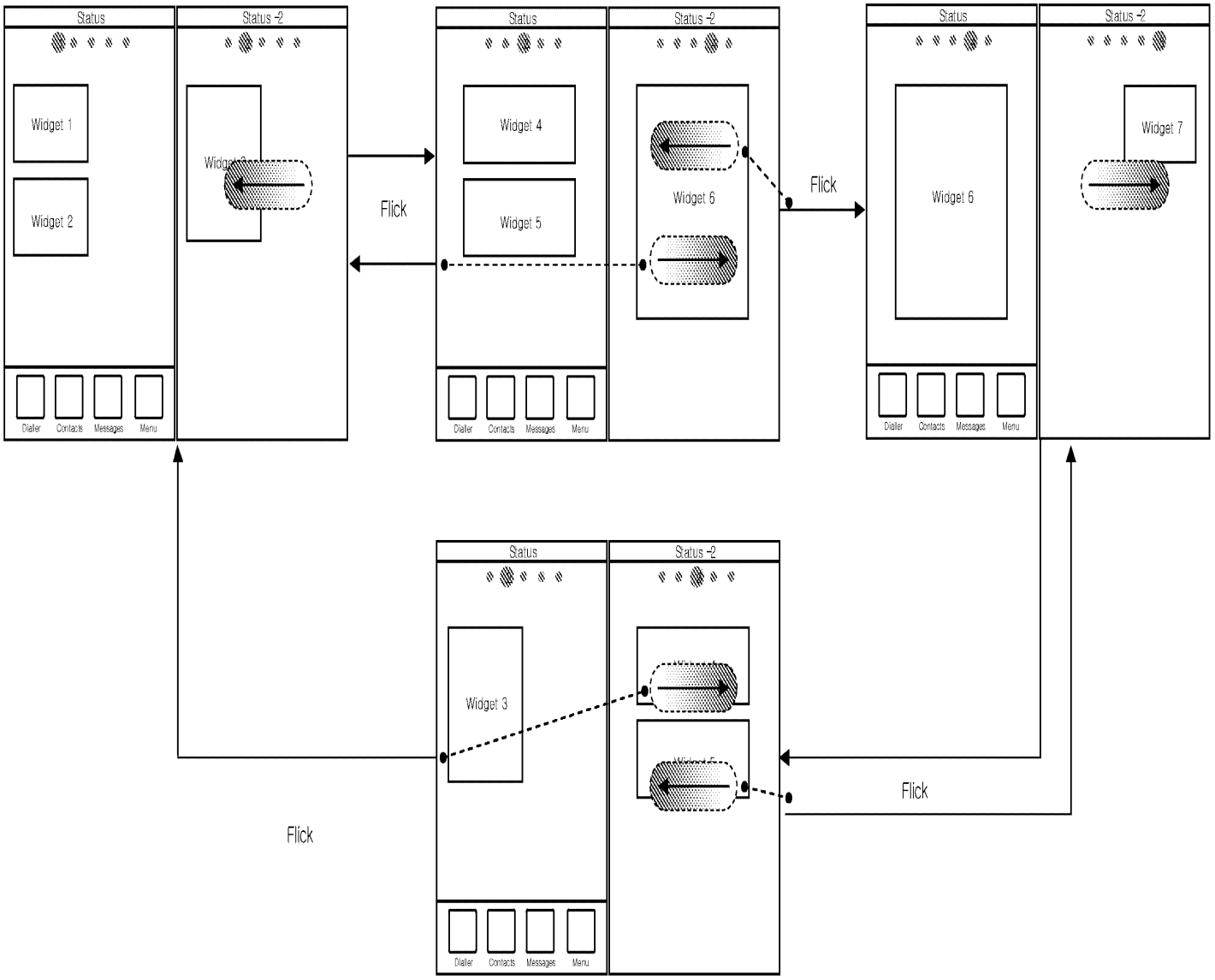


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2. Home Screen

2.2 Page Navigation

• Page Navigation for Expand-mode(A+) Home
- Quick Page Navigation per 2 pages
- Dock area : Fixed
- Maximum Number of Home screen Page : 8 Page

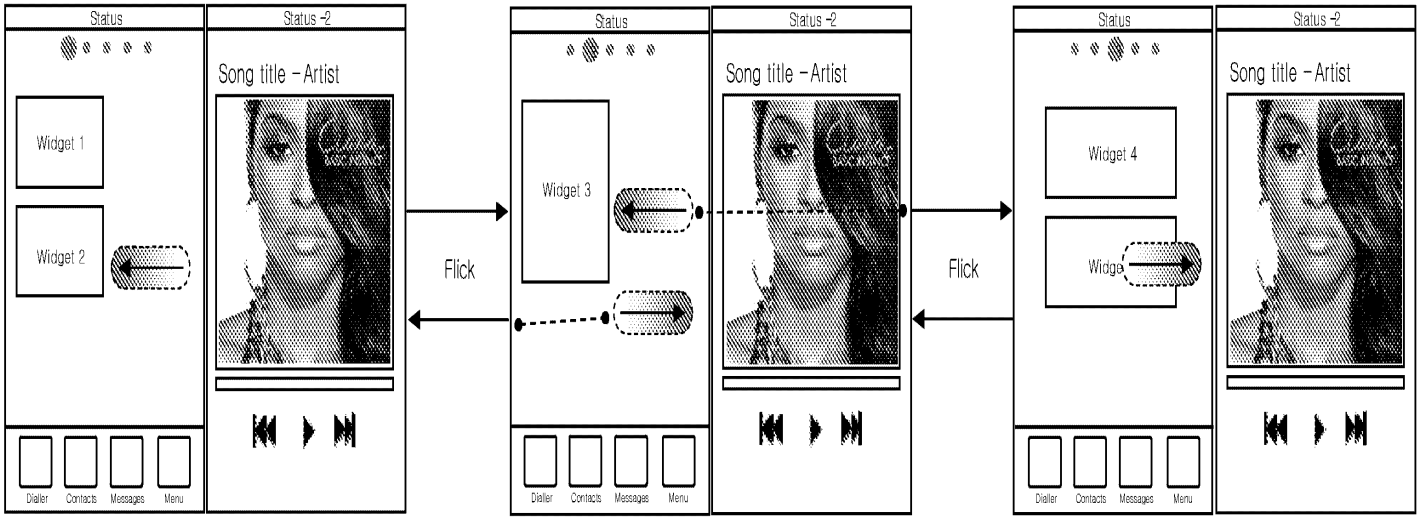


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2. Home Screen

2.2 Page Navigation

• Page Navigation for Split-mode Home (Single Screen Home)
- Quick Page Navigation per 1 pages
- Dock area : Fixed
- Maximum Number of Home screen Page : 8 Page

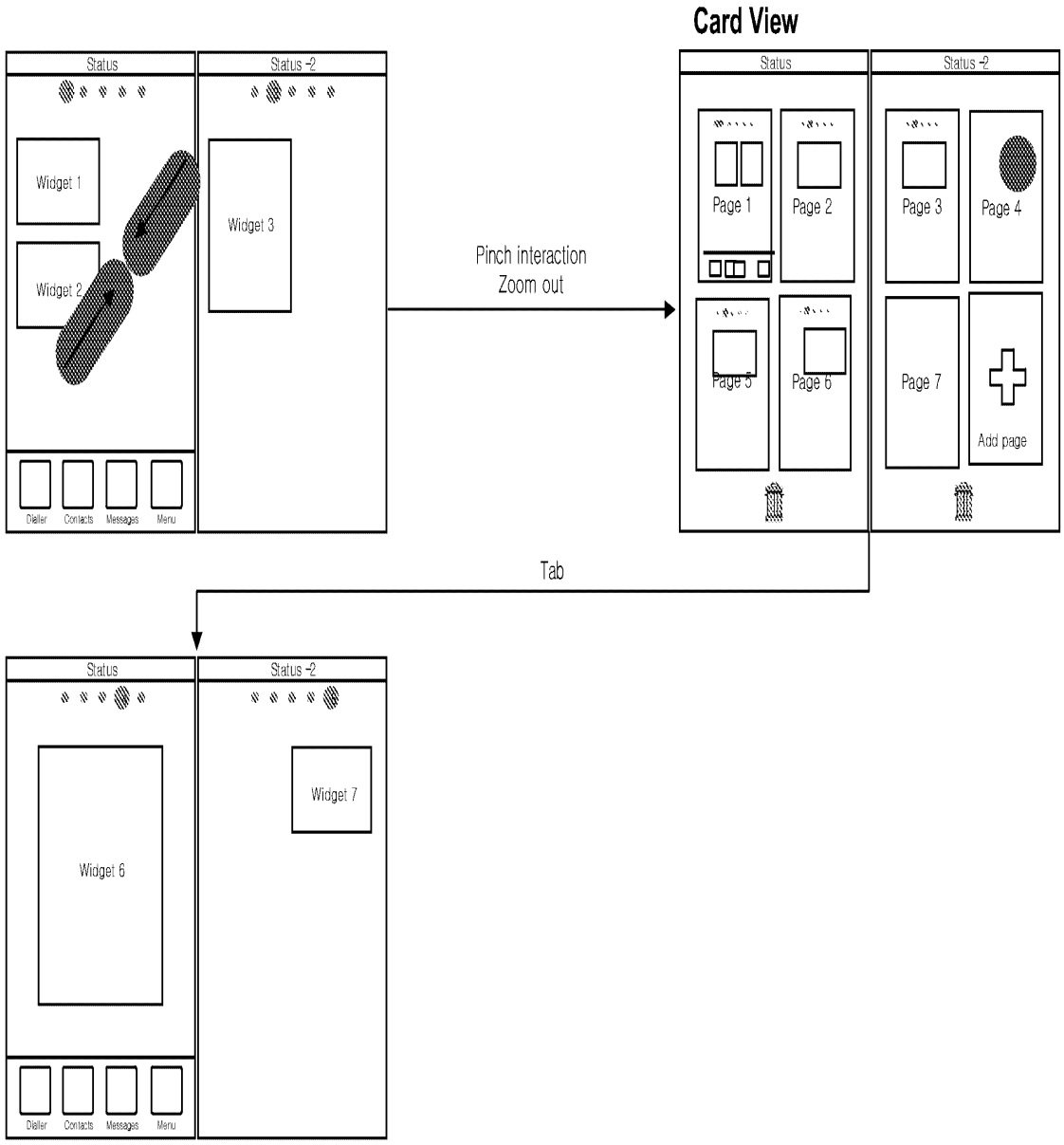


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2. Home Screen

2.2 Page Navigation

• Quick access for Page Navigation
- Enable user navigate between pages(card view) easily with Pinch zoom out

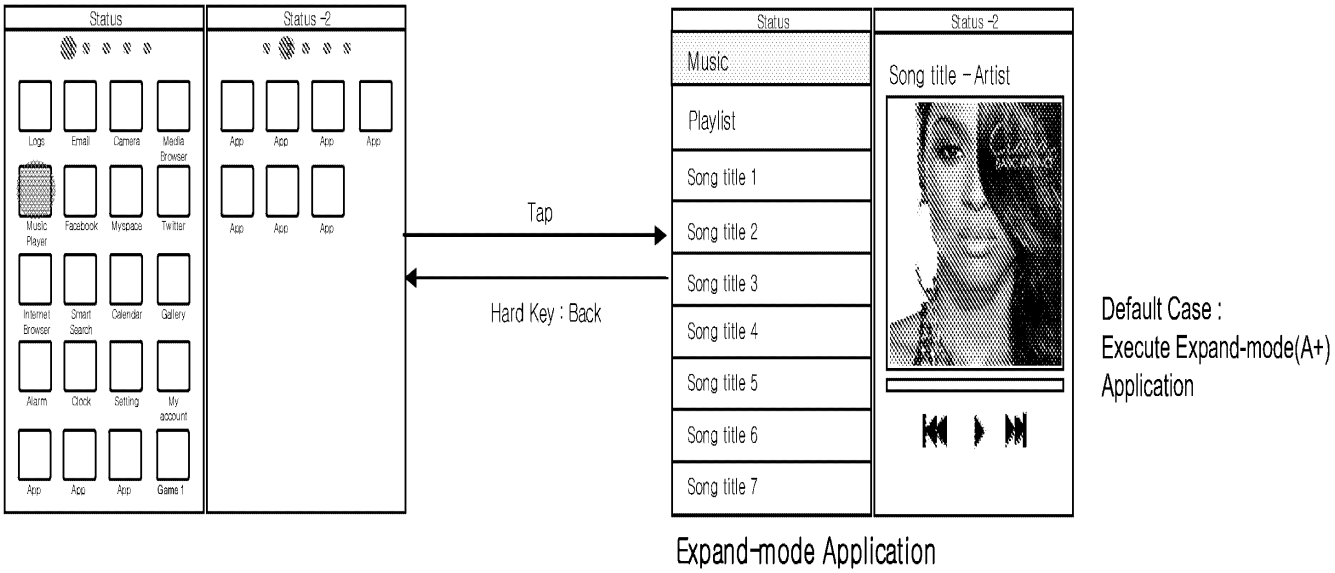


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2. Home Screen

2.3 Application Execution

• Application Execution for Expand-mode(A+) Home (1/2)
- Default : Execute Expand-mode(A+) Application



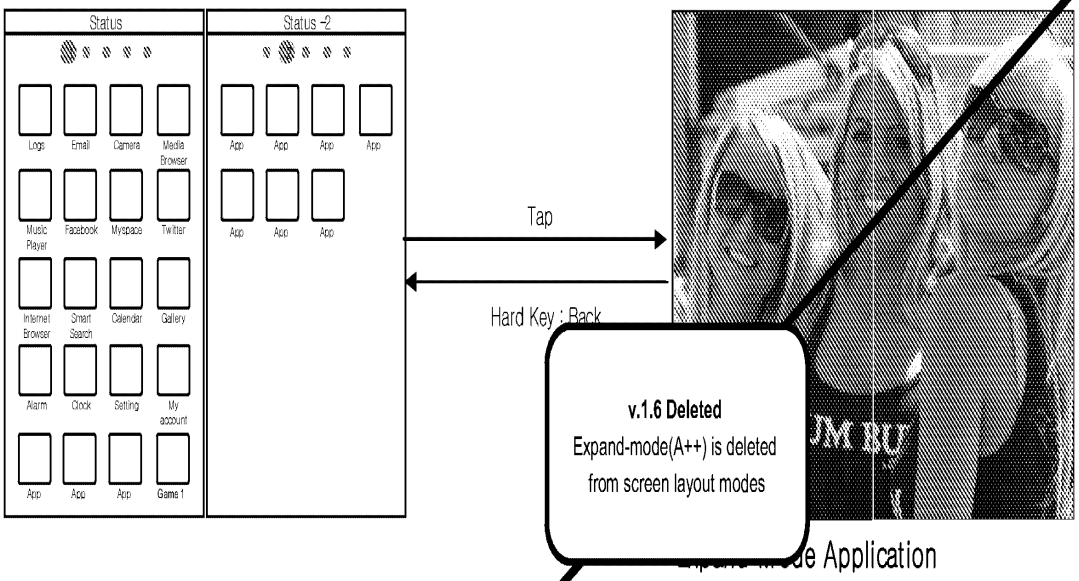
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2. Home Screen

2.3 Application Execution

• Application Execution for Expand-mode(A+) Home (2/3)

- When Expand-mode(A+) Application was executed just before home screen, then execute Expand-mode(A++) Application



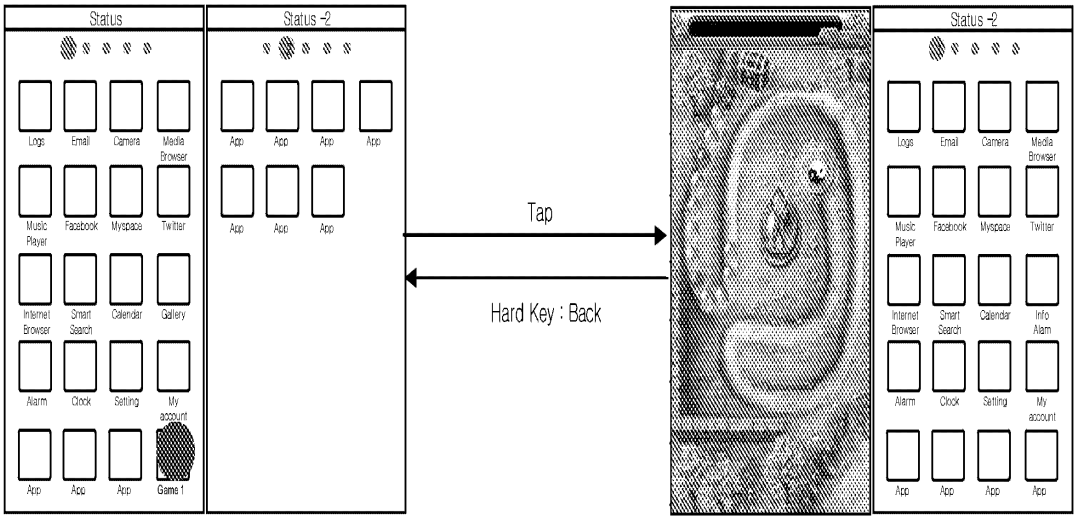
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2. Home Screen

2.3 Application Execution

• Application Execution for Expand-mode(A+) Home (2/2)

- 3rd Party Application that does not support Expand-mode(A+) : Execute Split-mode Application on the selected screen, and Display Split-mode Home on the other screen



Single Screen Application + Home

When the selected application does not support Expand-mode(A+), Execute Single Screen Application on the selected screen, and display Single screen home on the other screen.

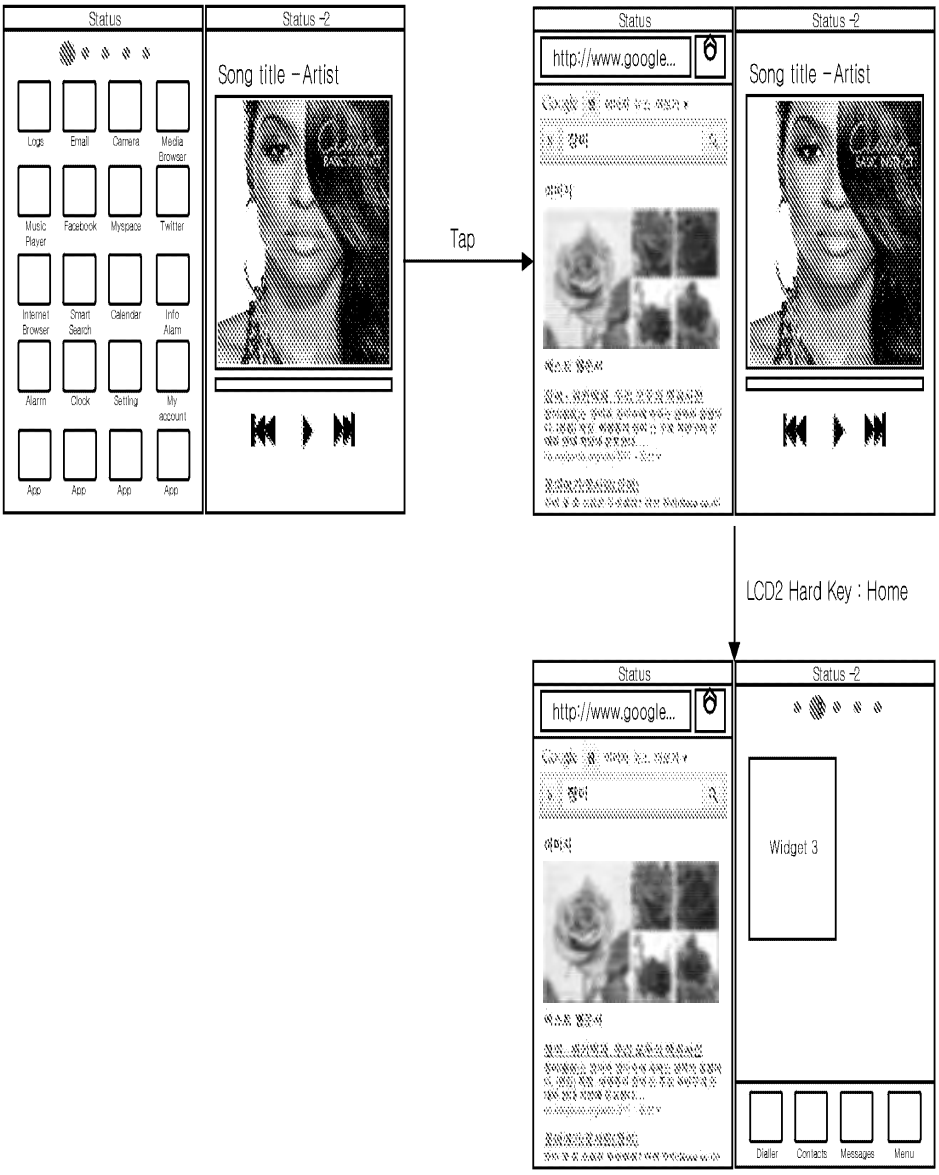
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2. Home Screen

2.3 Application Execution

• Application Execution for Split-mode Home (Single Screen Home) (1/2)

- Execute an Application on the screen which display home screen, and the other screen is not changed

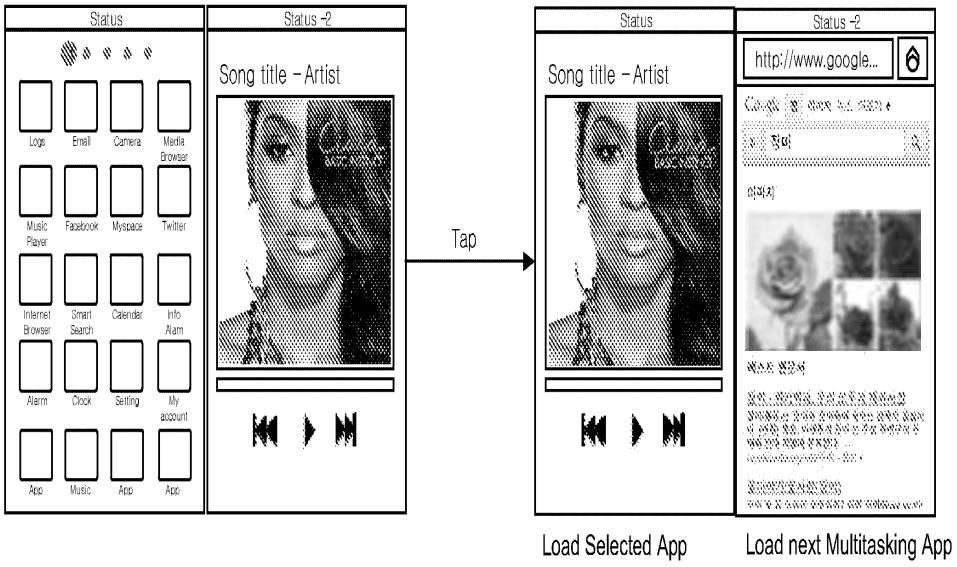


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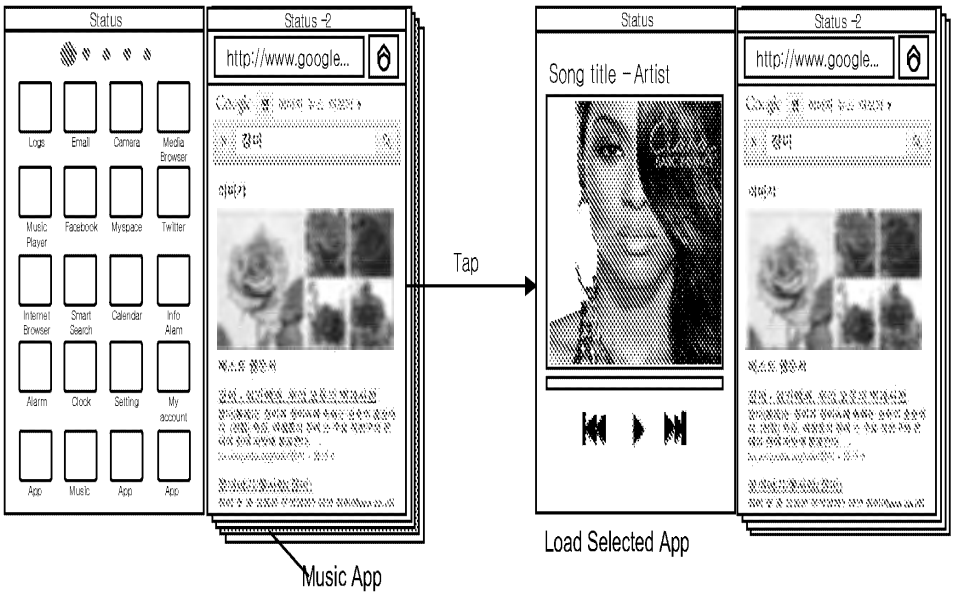
• Application Execution for Split-mode Home (Single Screen Home) (2/2) : Load Duplicate Application

- When the selected application is playing on the other screen, load the selected application on the screen which display home screen, and load the next multitasking application on the other screen.

Load Duplicate application playing on the other screen



Load Duplicate application played on the other screen



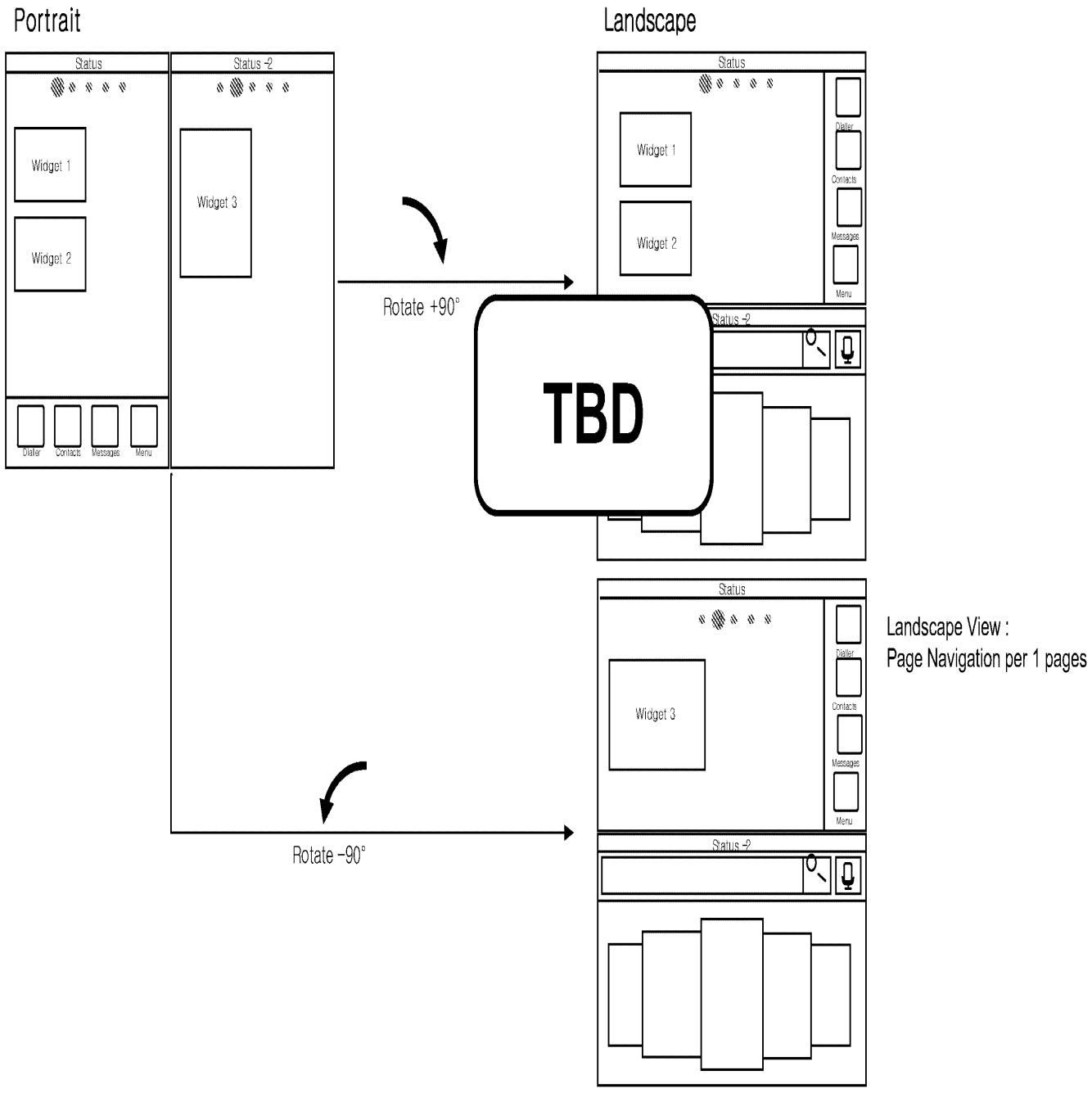
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2. Home Screen

2.4 Portrait view to Landscape view

• Rotating in the home screen

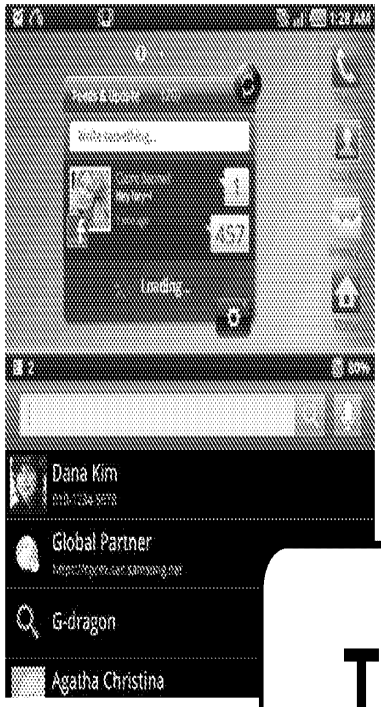
- Landscape View : Additional search box and multitasking application list would be displayed on the second screen



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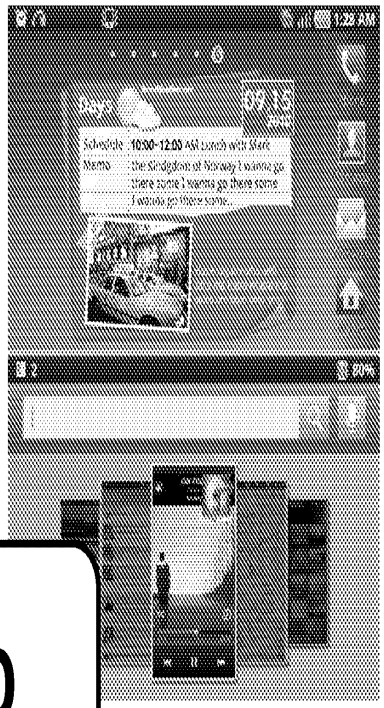
2. Home Screen

2.4 Portrait view to Landscape view



Quick search

TBD



Multitasking



가로모드 추천 App.



통합 SNS

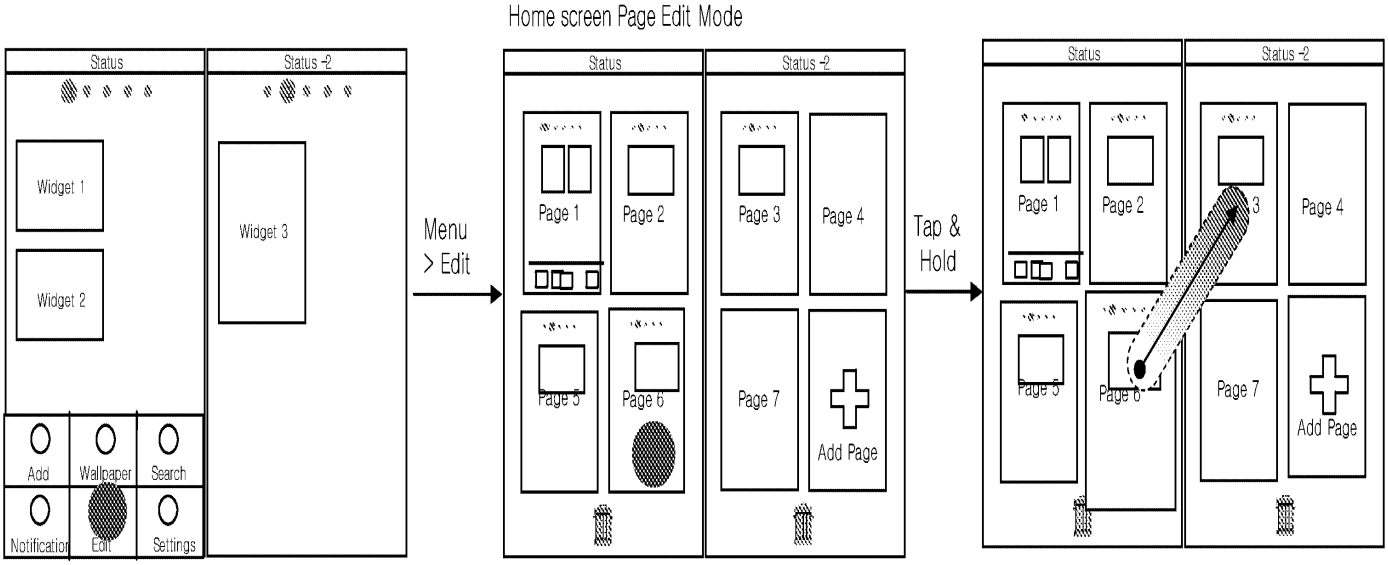
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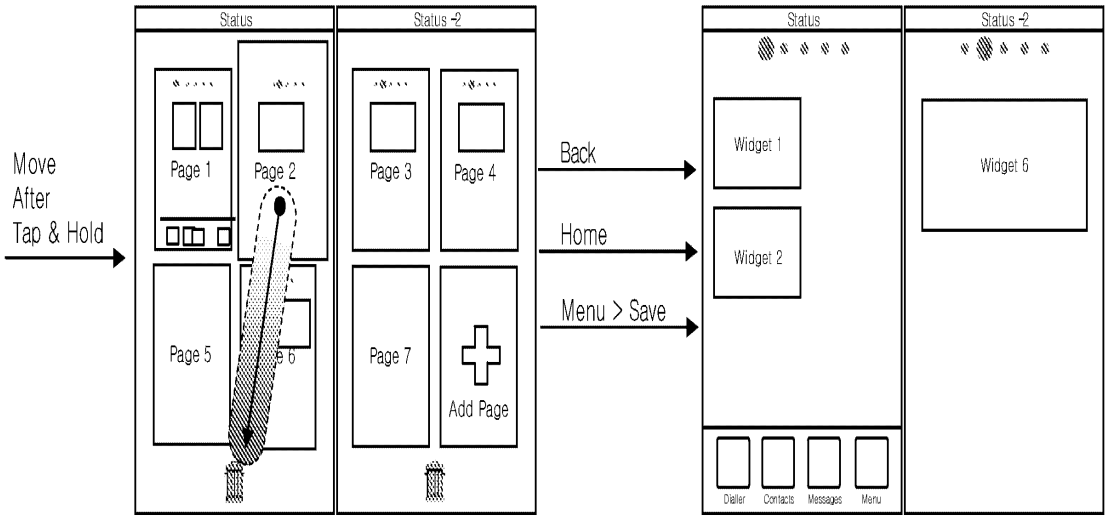
2. Home Screen

2.5 Edit

• Edit Mode : Page Edit

- User will be able to edit the order and number of those multiple home screens. (Conforming to Samsung android UI Guide)





Delete page with Dragging
If there is a Widget, it should displays Confirmation popup. ("This page has widgets. remove?")

Save and
Return to Home screen

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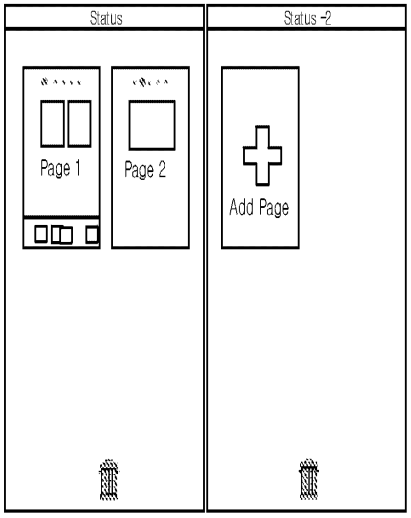
2. Home Screen

2.5 Edit

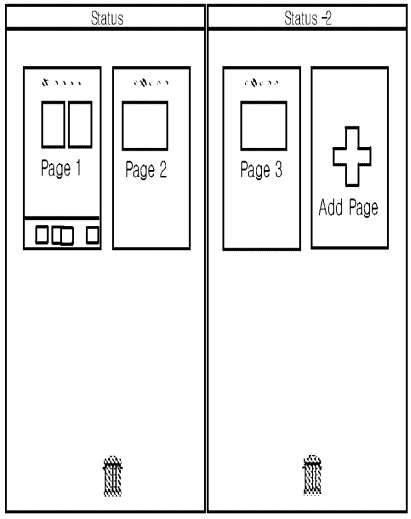
v.1.5 Updated
Min Num of Home screen Page Updated

• Edit Mode : Page Edit
- Layouts for Home screen Page Edit Mode
- Maximum Number of Home screen Page : 8 Page
- Minimum Number of Homescreen Page : 2 Page

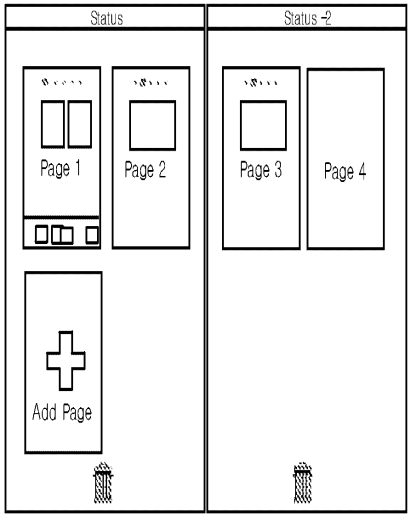
Home screen Page Edit Mode : 2 Page



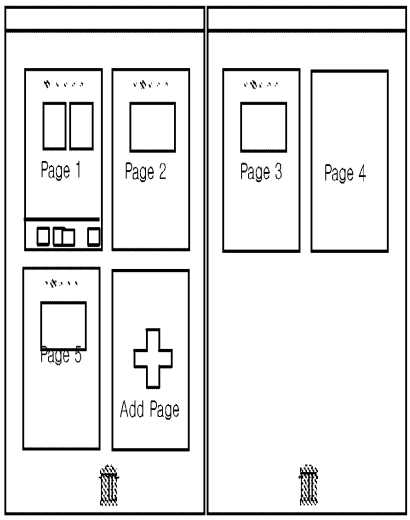
Home screen Page Edit Mode : 3 Page



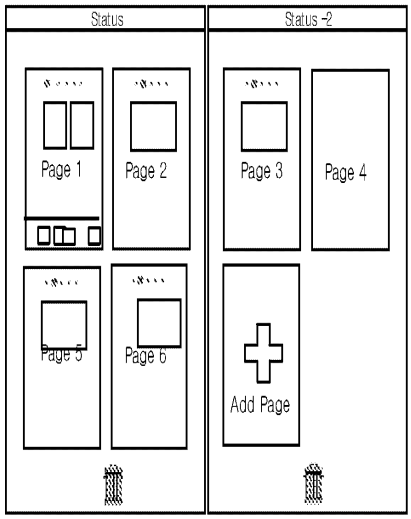
Home screen page Edit Mode : 4 Page



Home screen page Edit Mode : 5 Page



Home screen page Edit Mode : 6 Page



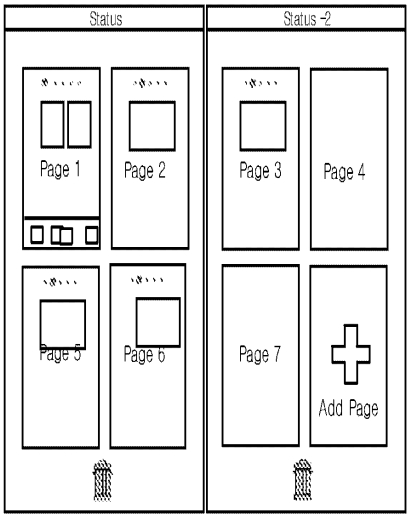
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2. Home Screen

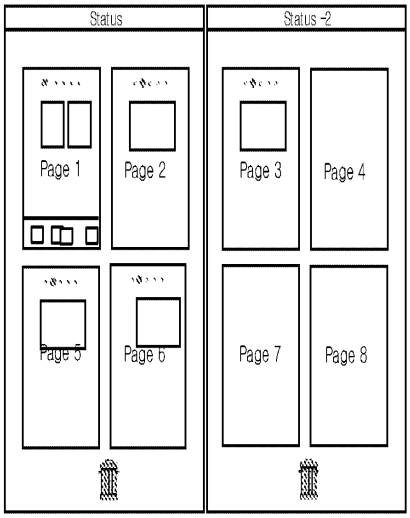
2.5 Edit

• Edit Mode : Page Edit
- Layouts for Home screen Page Edit Mode
- Maximum Number of Home screen Page : 8 Page
- Minimum Number of Homescreen Page : 2 Page

Home screen Page Edit Mode : 7 Page



Home screen Page Edit Mode : 8 Page

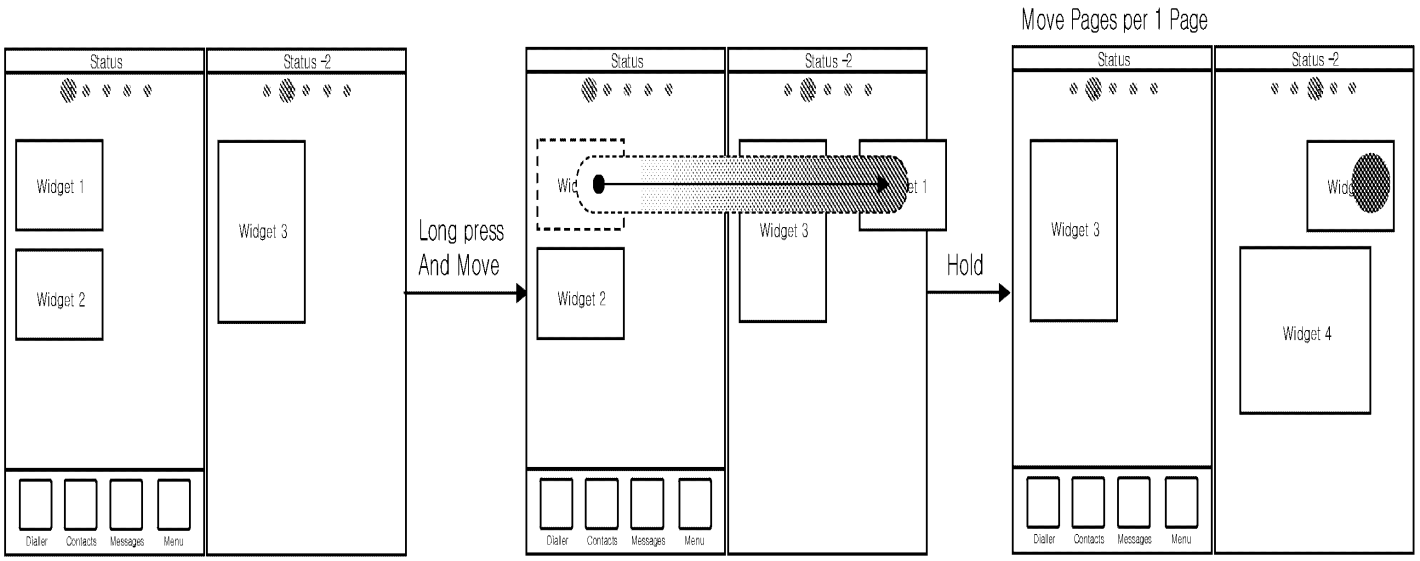


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2. Home Screen

2.5 Edit

• Edit Mode : Move Items
- Moving interaction is very similar to android method.
- Visual cue should applied to the outline of widget item if automatically scrolling is available (Conforming to Samsung android UI Guide)



- Visual cue will be supported similar to delete case
When the ¼ of icon area goes to edge of screen, border of icon color will be changed
- Improve the speed of auto scrolling.

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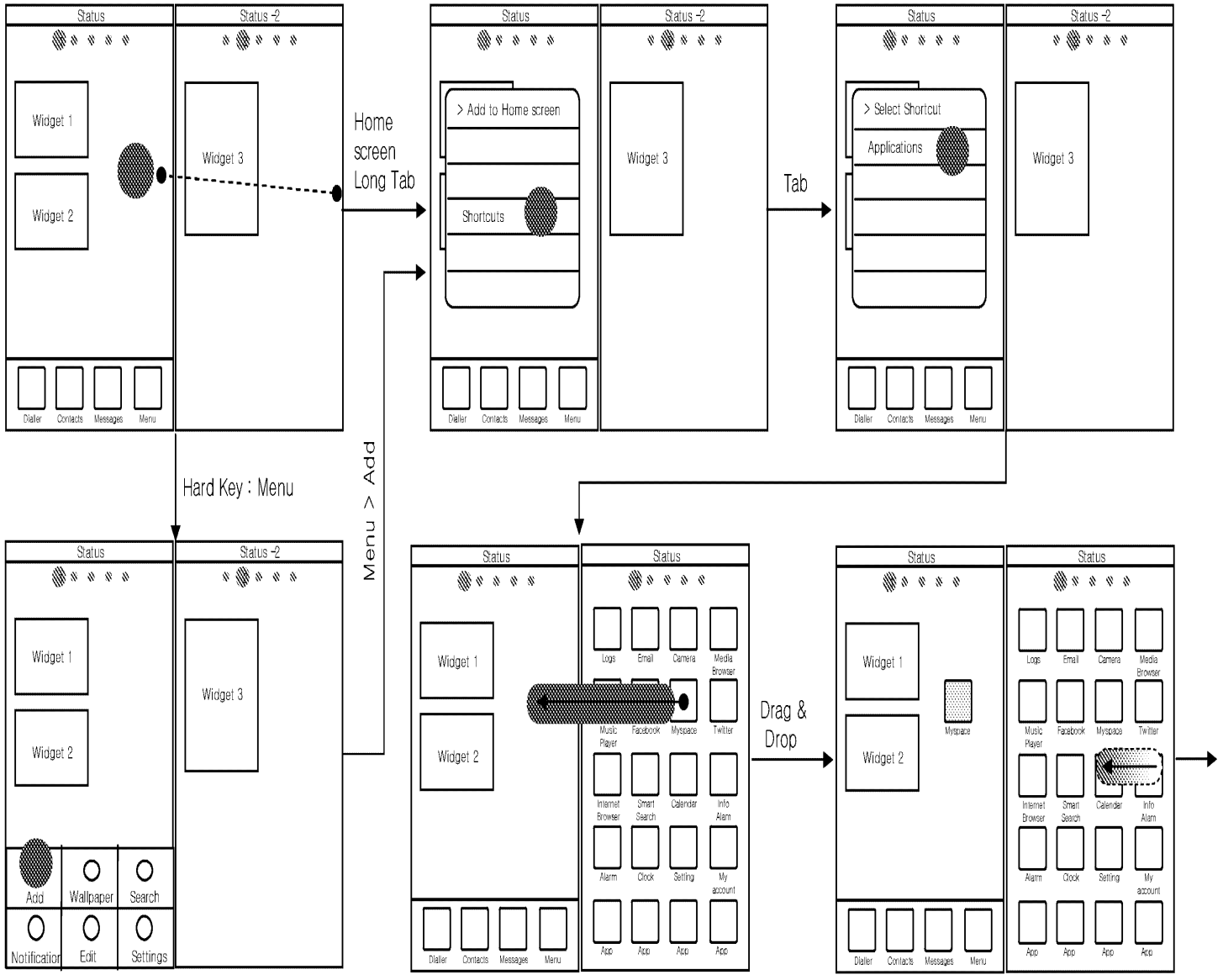
2. Home Screen

2.6 Add Application Shortcut

Comment
GUI Effect for shortcut mode icon

- Application shortcut creation

- Home > Long Tab > Add to Home screen Popup > Shortcut > Application
- User may create application shortcut on home screen by drag & drop on an icon from application menu screen to home screen
- User may create multiple application shortcuts on home screen by drag & drop icons multiple times



[Quick Add Shortcut Mode]

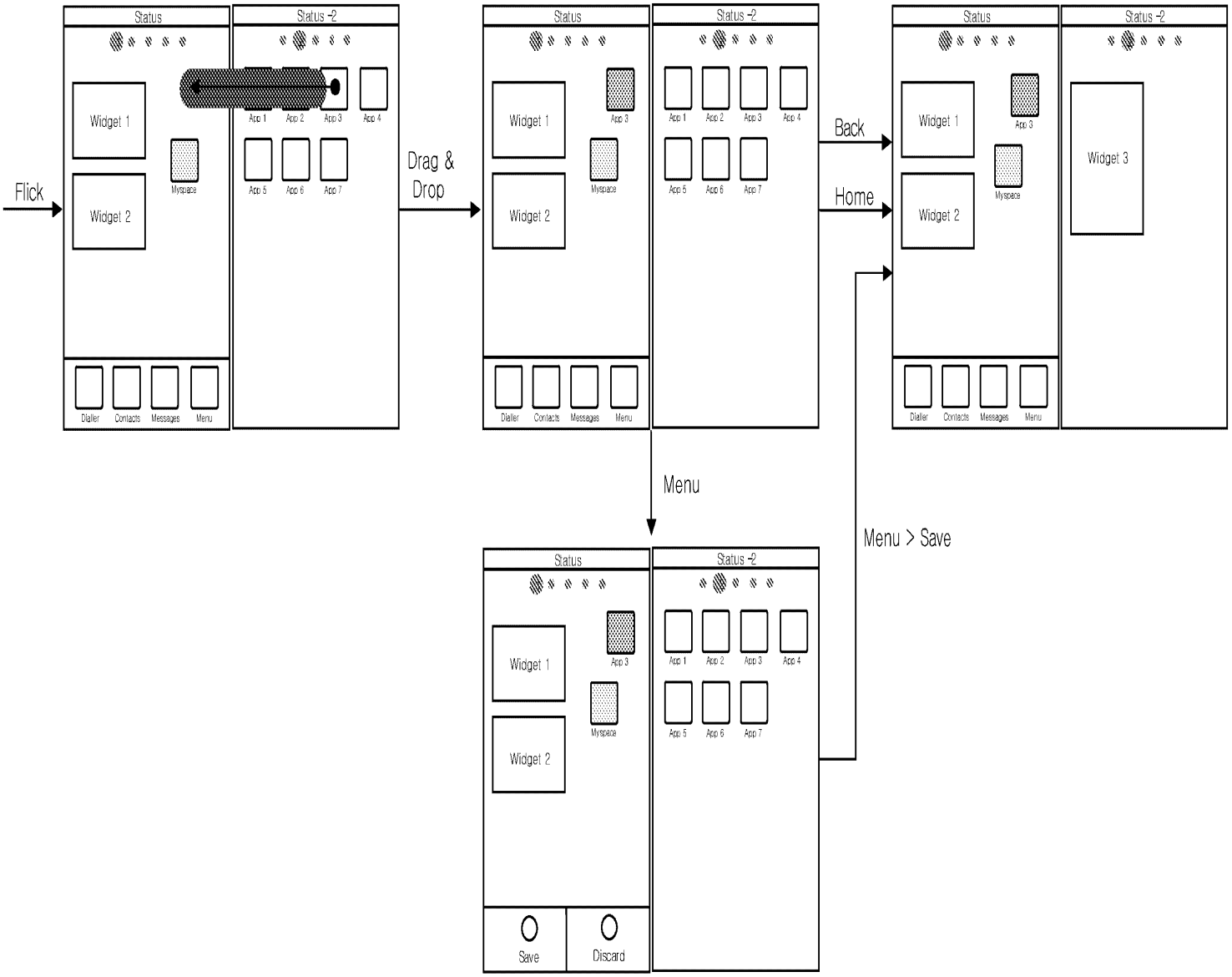
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2. Home Screen

2.6 Add Application Shortcut

• Application shortcut creation

- Home > Long Tab > Add to Home screen Popup > Shortcut > Application
- User may create application shortcut on home screen by drag & drop on an icon from application menu screen to home screen
- User may create multiple application shortcuts on home screen by drag & drop icons multiple times



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Application Screen

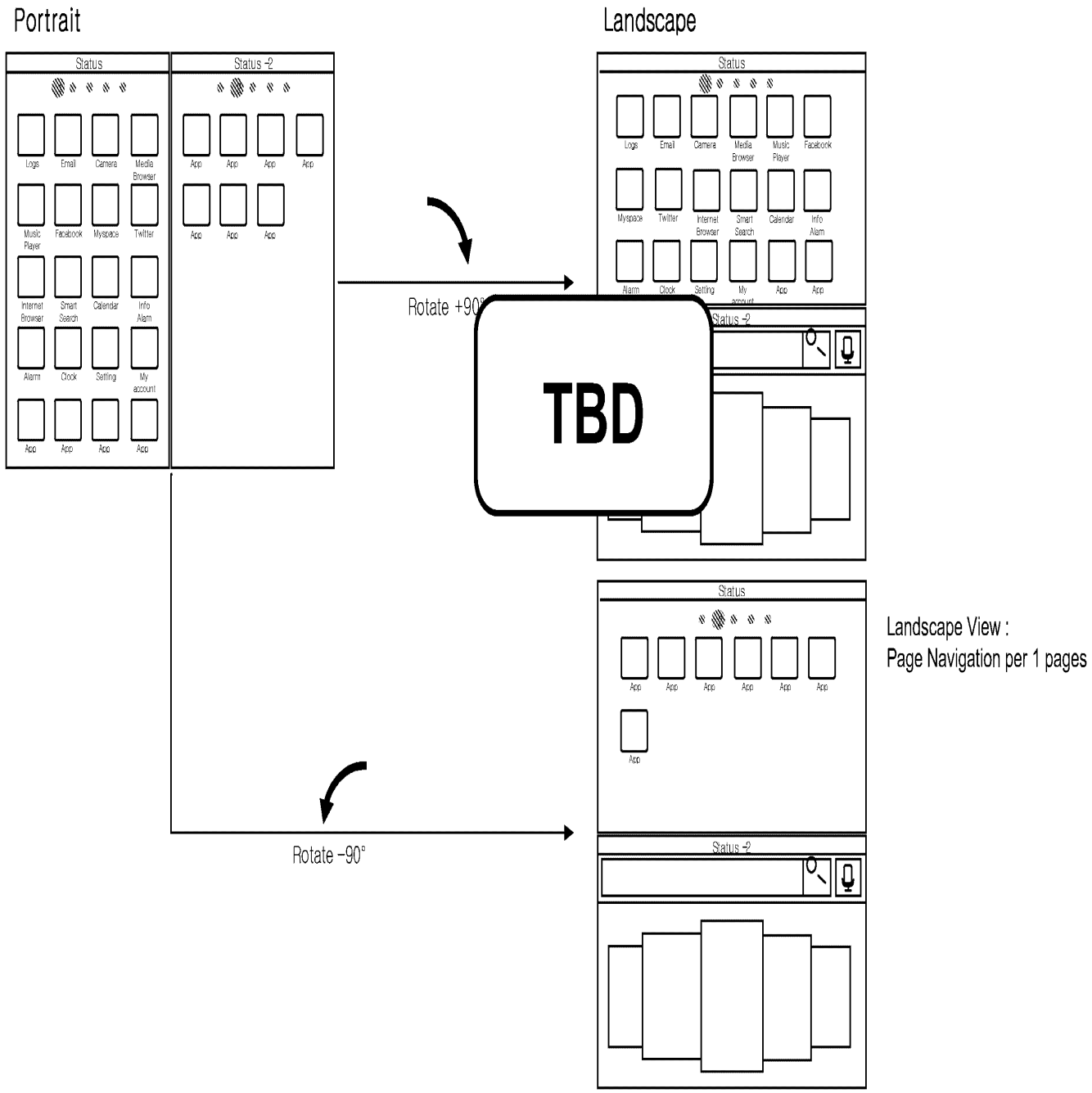
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3. Application Screen

3.1 Portrait view to Landscape view

- Rotating in the application

- Landscape View : Additional search box and multitasking application list would be displayed on the second screen



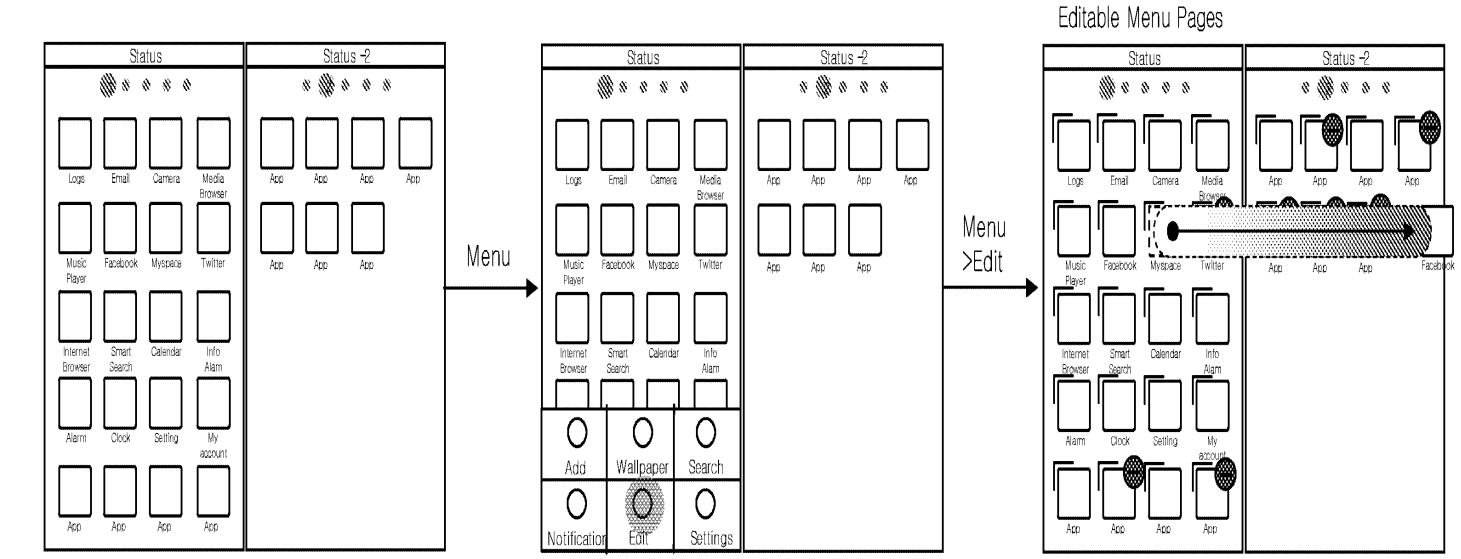
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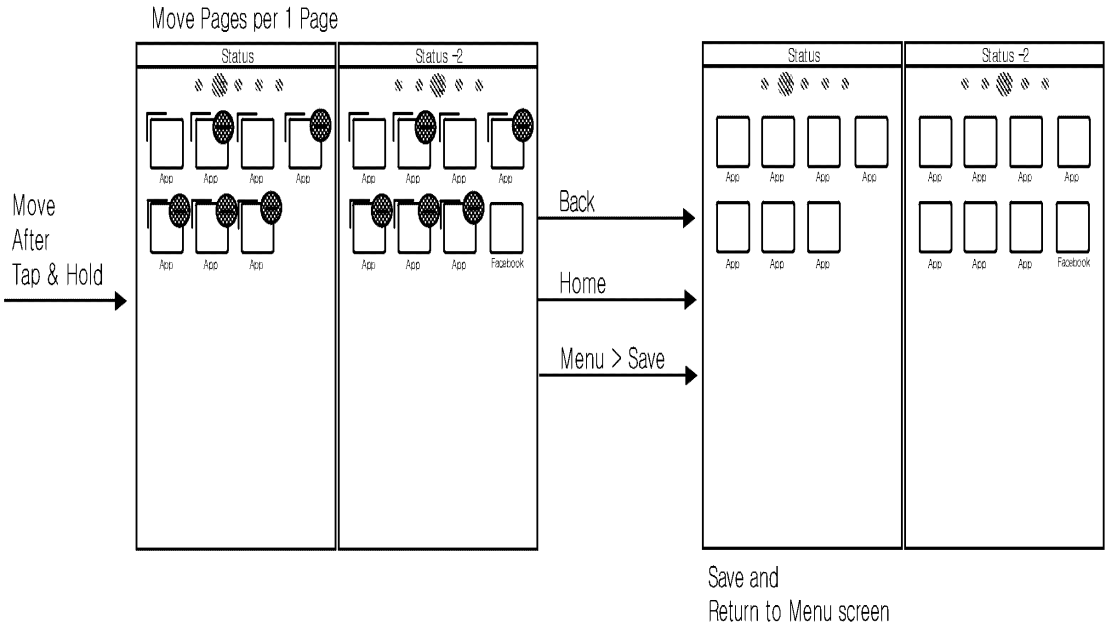
3. Application Screen

3.2 Edit

• Edit Mode

- User may change location of applications by drag & drop in menu edit mode. (Conforming to Samsung android UI Guide)



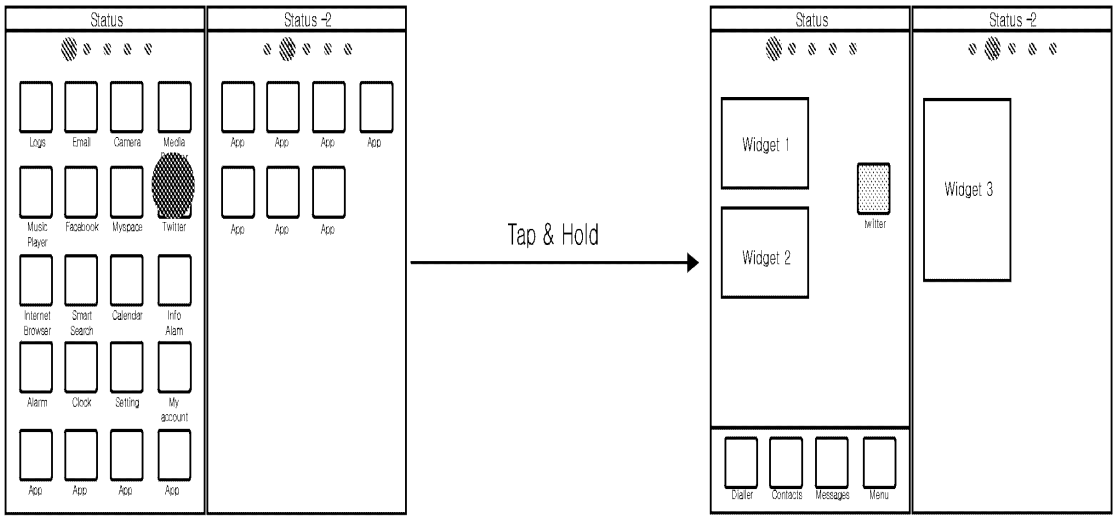


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3. Application Screen

3.3 Add Application Shortcut

- Application shortcut creation
  - User may create application shortcut on home screen by tap & hold on an icon in application menu (Conforming to Android UI)



Application shortcut creation is conforming to Android UI

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Multi-tasking

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4. Multitasking

4.1 Overview

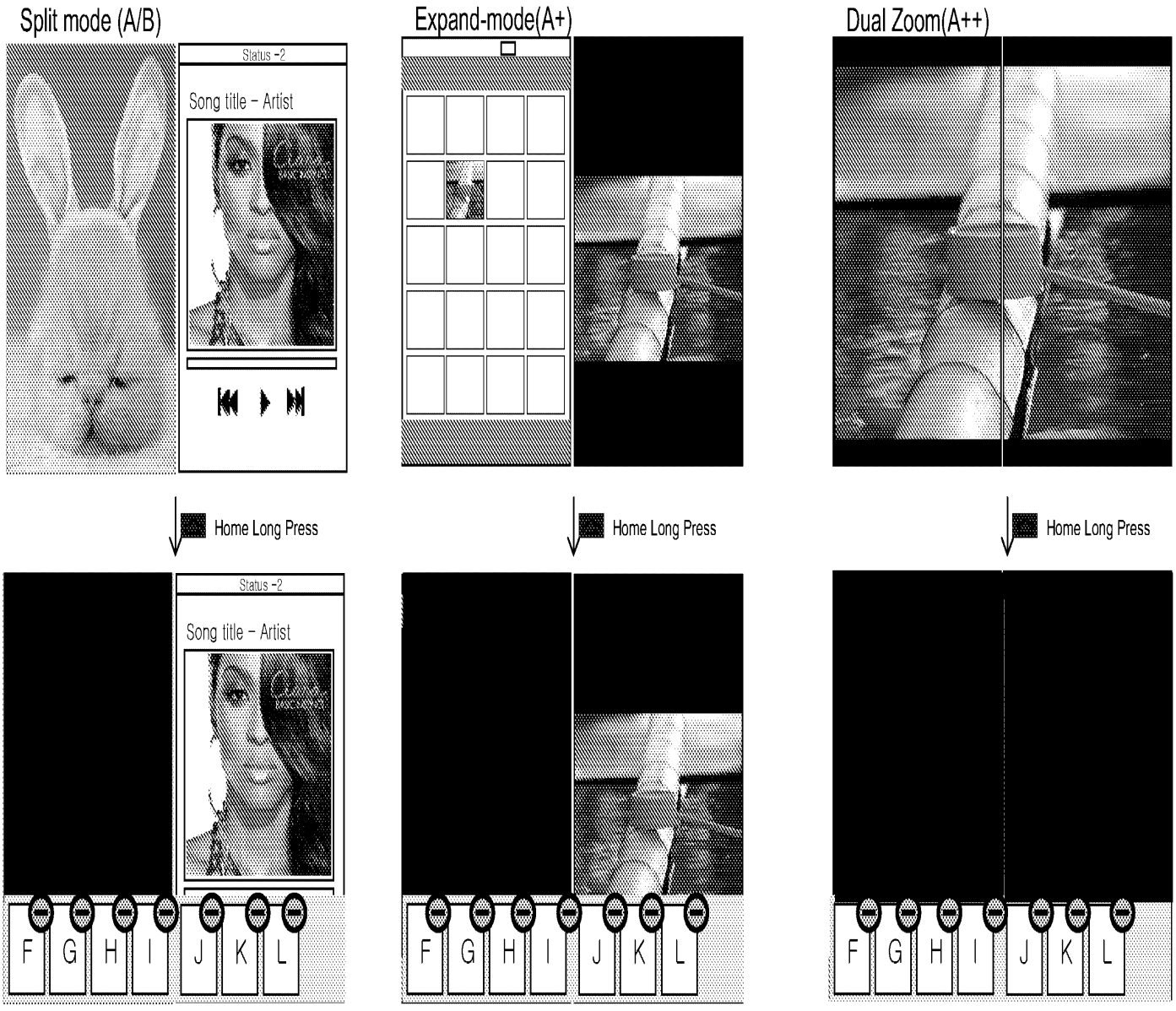
issue

Multi-Tasking Interaction in folding case.
Follow the android multitasking guideline for single display.

v.1.5 Updated
Task Manager Layout Updated
Task Manager for Split & Expand Mode Updated

User can change task using Task Manger.

• Task change using Task Manger



Task Manager Screen

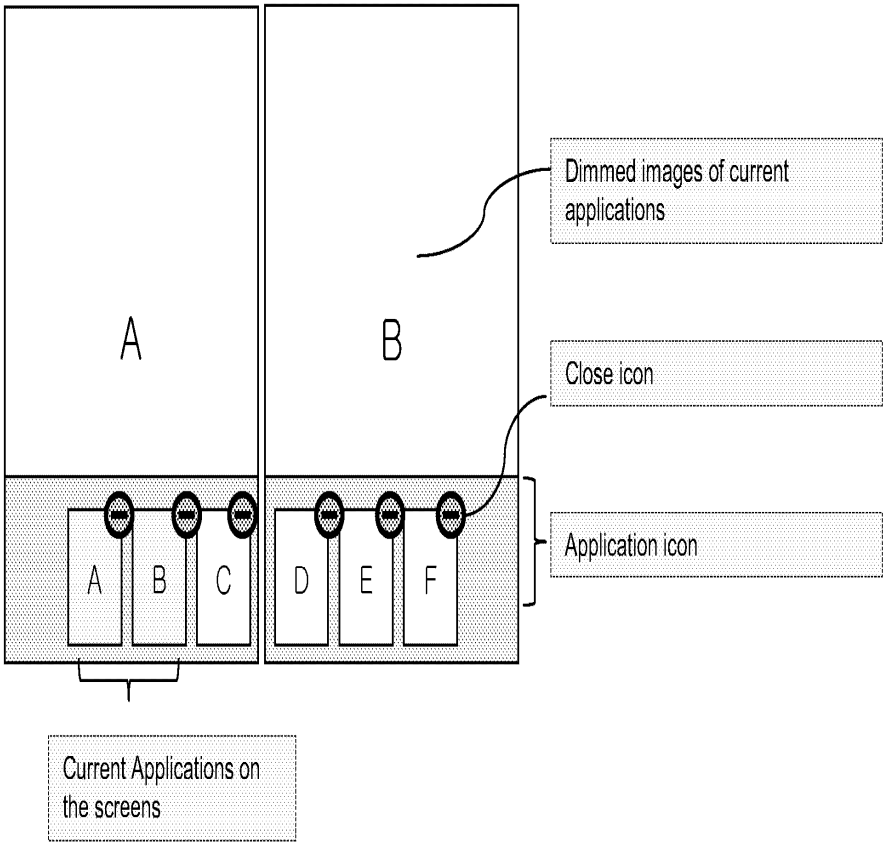
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4.2 Task Manager

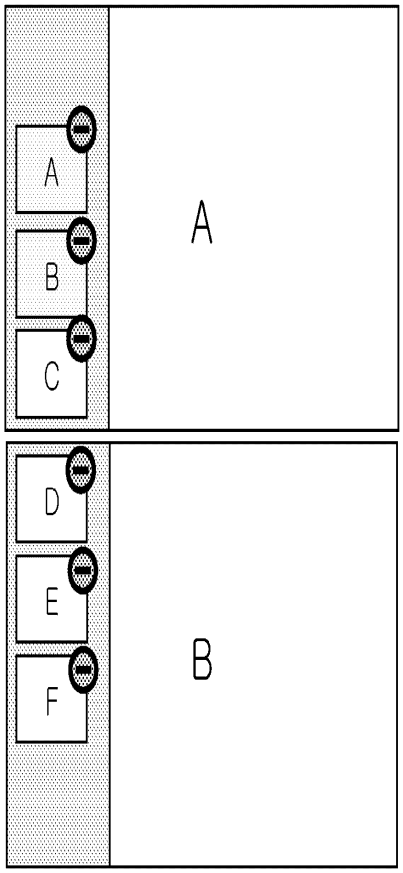
v.1.5 Updated
Task Manager Layout Updated
Task Manager for Split & Expand Mode Updated

- Task manager

[Portrait mode]



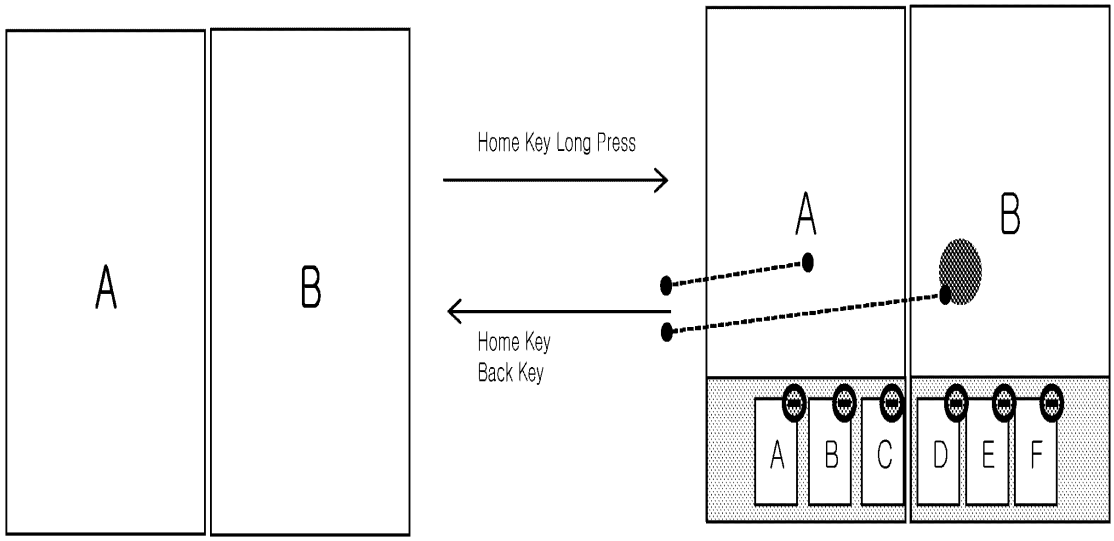
[Landscape mode]



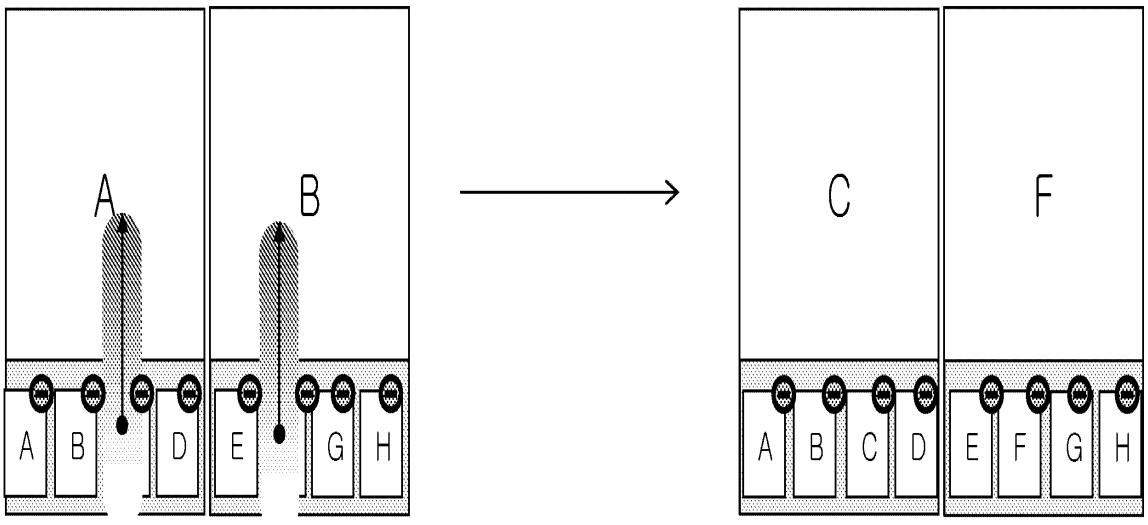
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4.3 Basic Flow

- If user drag an App icon to current screen, the screen is change to the dragged App.



- Split mode (A/B)
- If user select an App icon to one screen, the screen is change to the selected App.

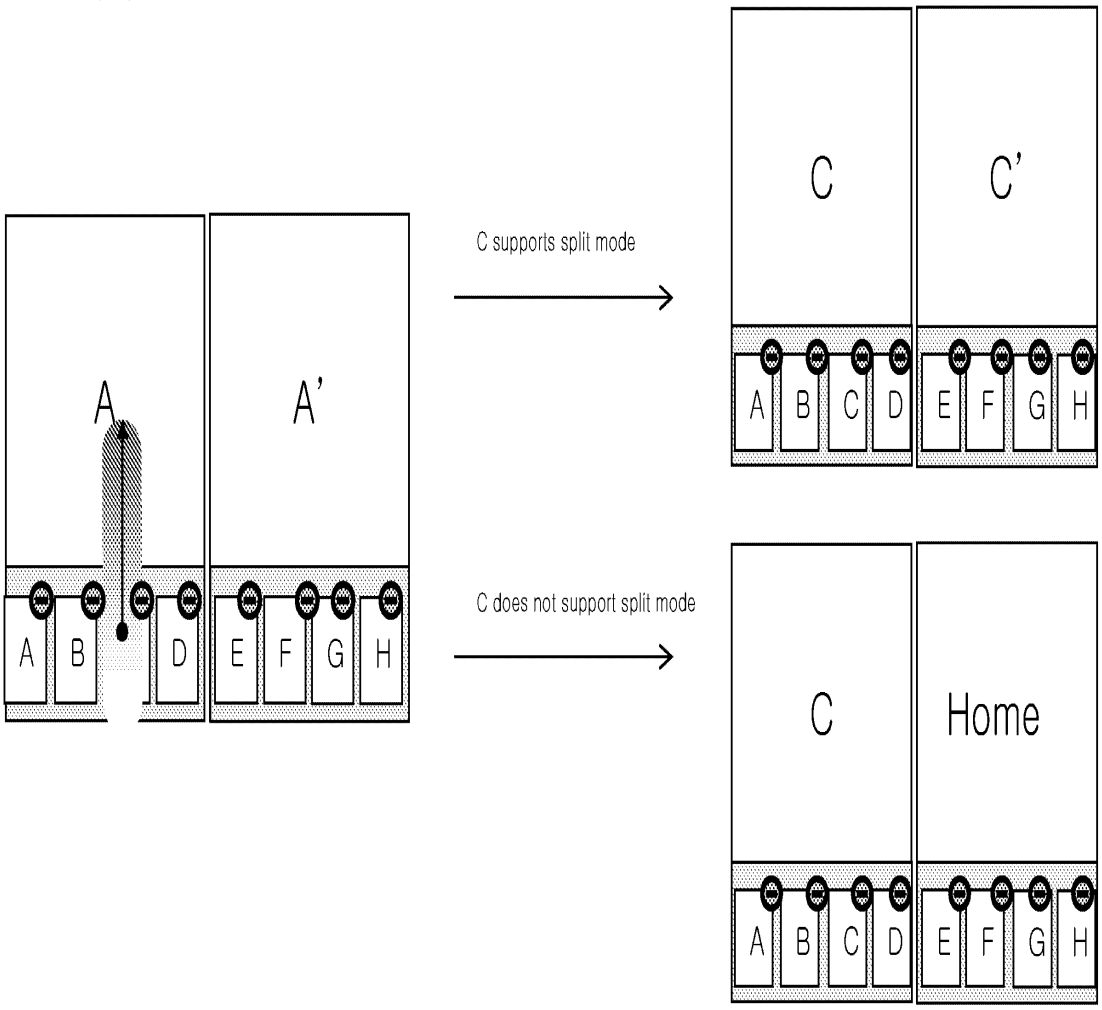


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4.3 Basic Flow

v.1.5 Added
Task Manager for Split Mode Added

- Expand-mode(A+)

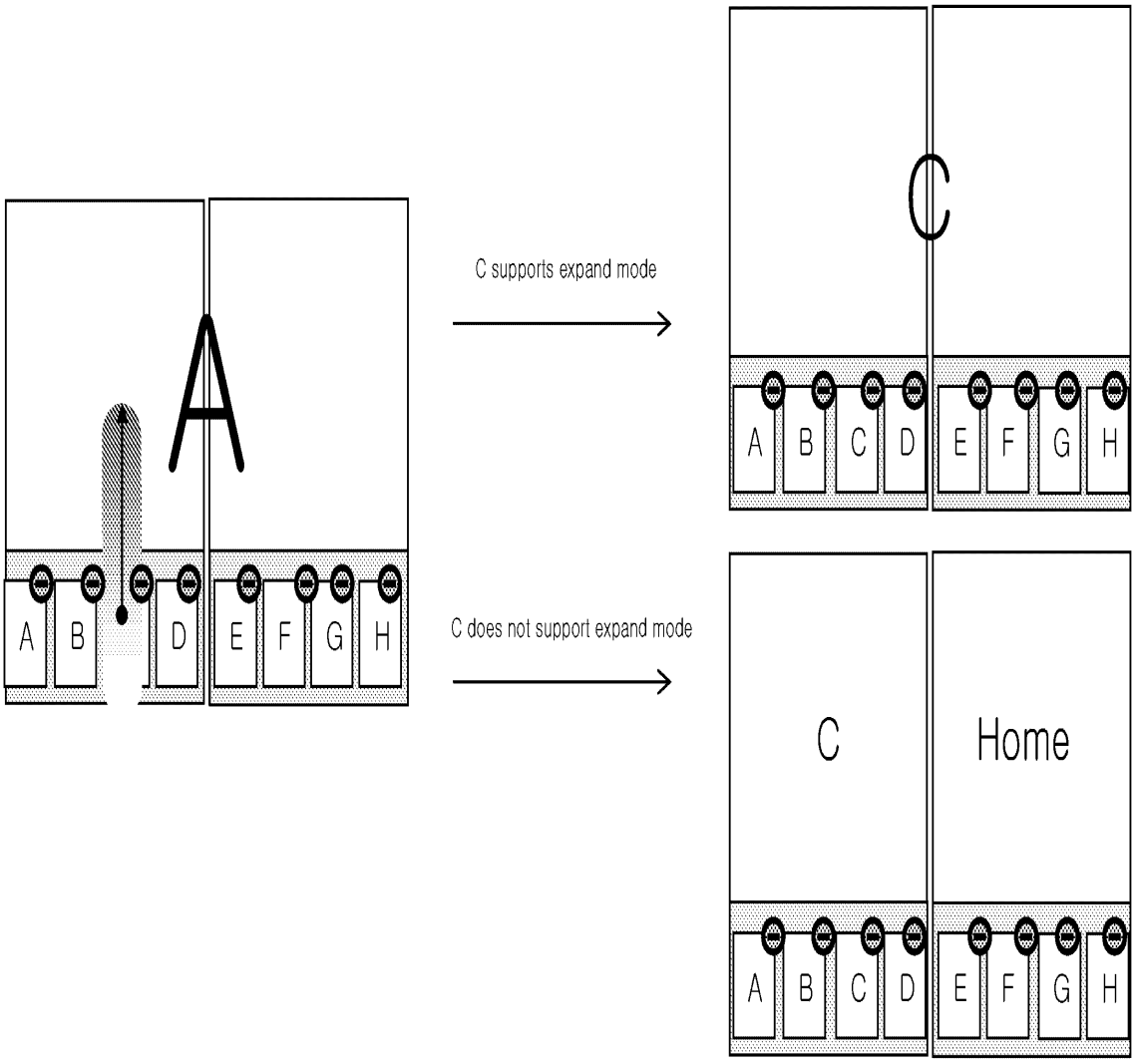


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4.3 Basic Flow

v.1.5 Added
Task Manager for Expand Mode Added

- Dual Zoom(A++)

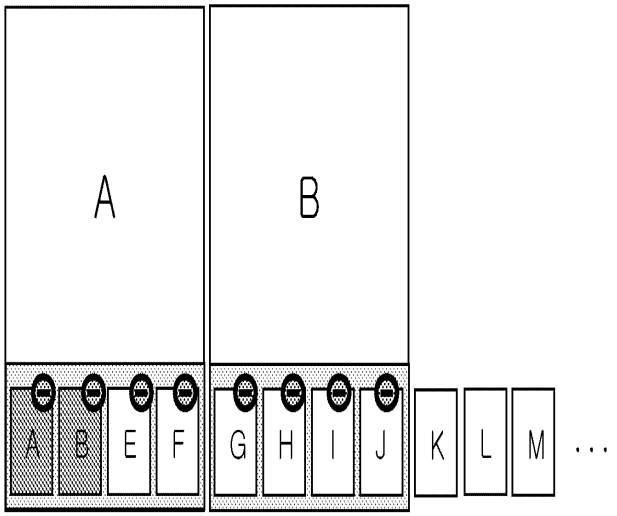


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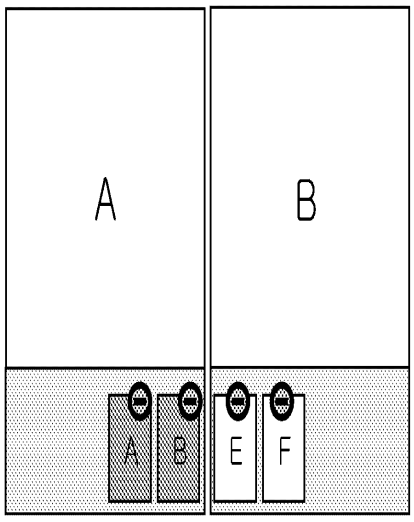
4.3 Basic Flow

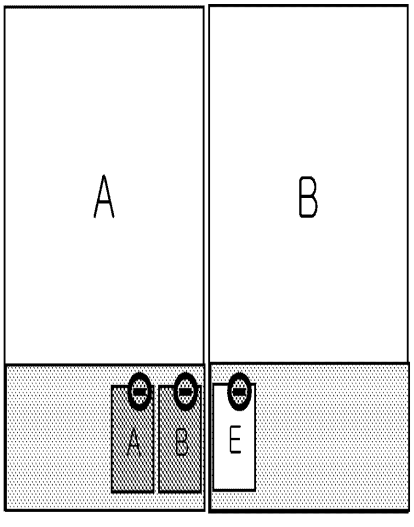
- Alignment
  - The order of App list is base on last played time.
  - Current displayed App is located in 1st, 2nd position.

1. More than 8 App : Left-aligned



2. Less than 8 App : center-aligned

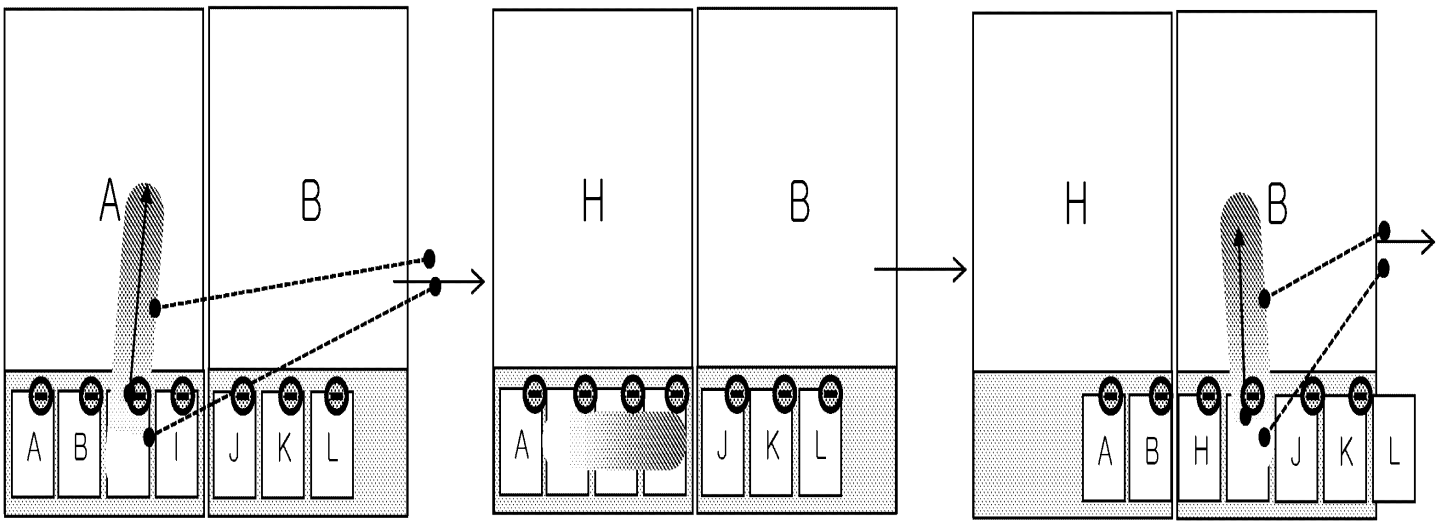




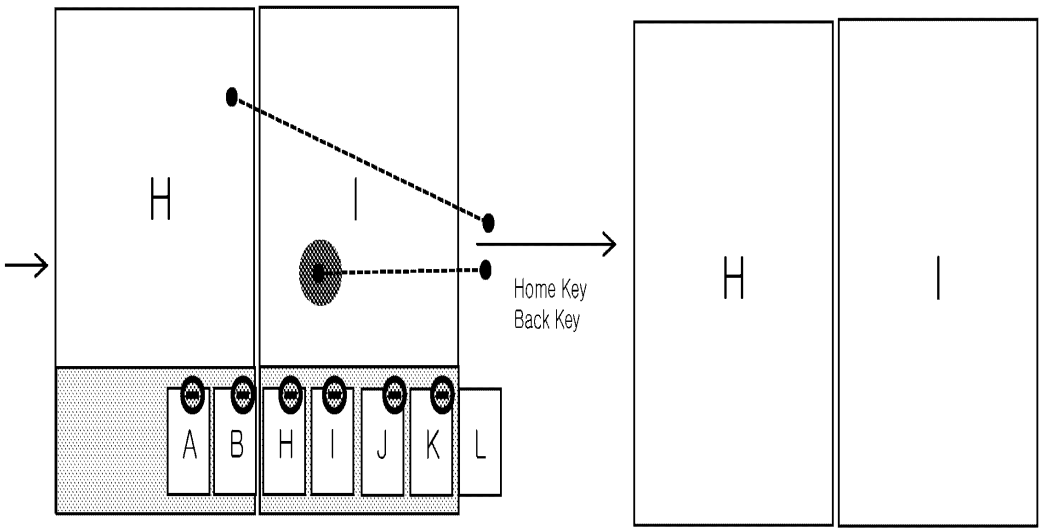
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4.3 Basic Flow

- Application Assign
- User can assign App to current screen by Tap or Drag & Drop.
- If user tap current screen area or press Home/Back key, Task Manager is closed.



Left screen is assigned H App



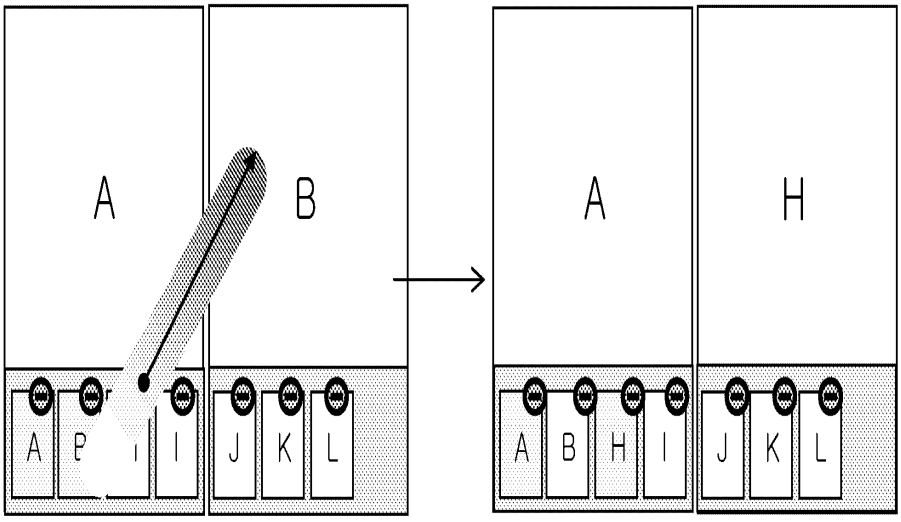
Right screen is assigned I App.

Multitasking mode 종료

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4.4 Basic Flow

- Application Assign
  - User can assign App to the other screen by Drag & Drop.



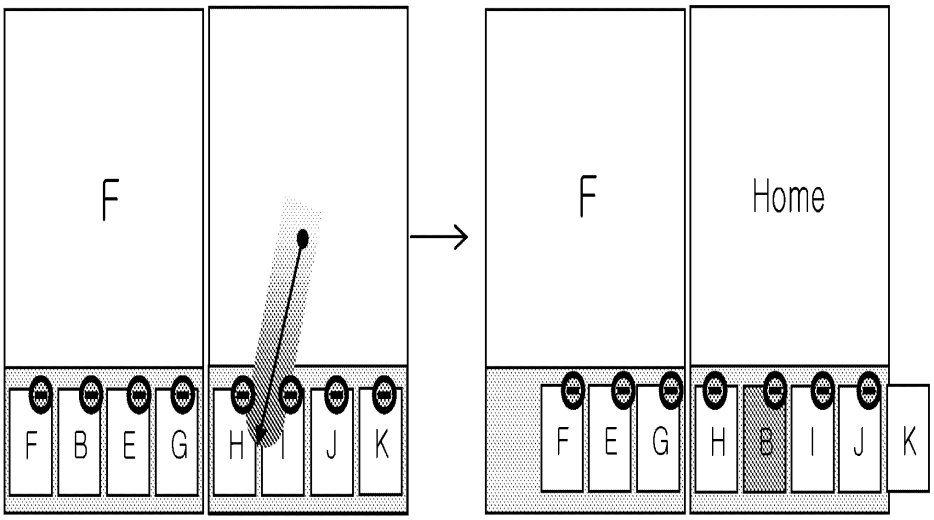
Right screen is assigned H App

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4.4 Basic Flow

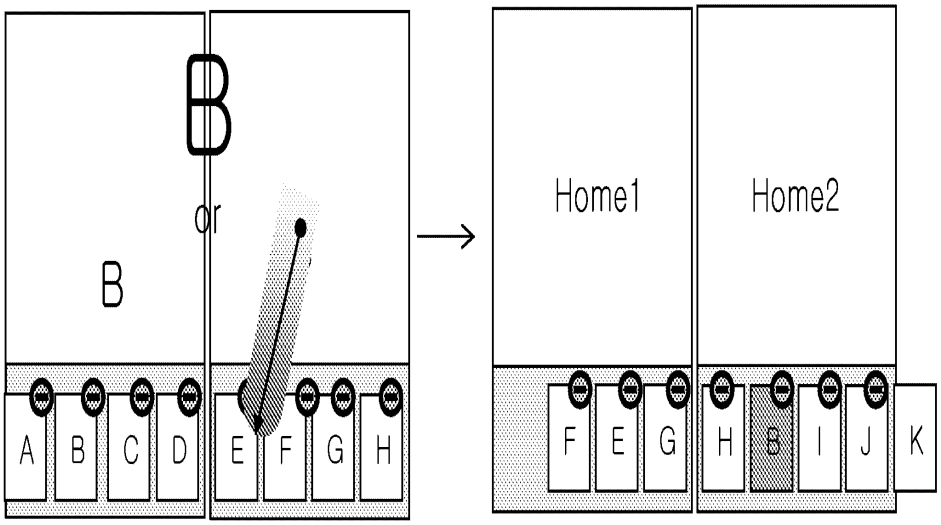
v.1.5 Updated
Application Deletion Rule Updated

- Application Deletion
  - User can close the app on the screen by Drag & drop, and then the screen would display home screen instead.



Delete B application on the right screen.

Home screen would be displayed on the right screen.

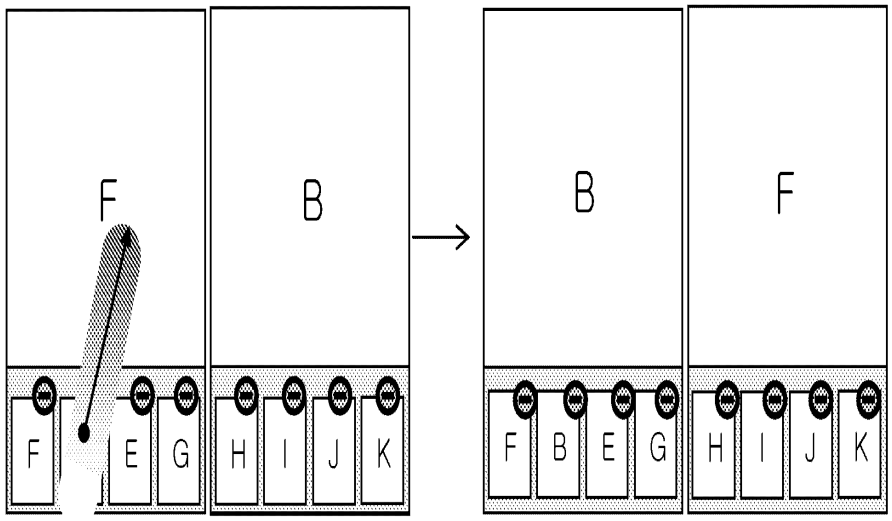


Home screen would be displayed on both screens.

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7.4 Basic Flow

- Assign duplicated App with the other screen.
  - Swap two applications on both screens



Assign the duplicated App with the right screen on the left screen

Swap two applications on both screen.

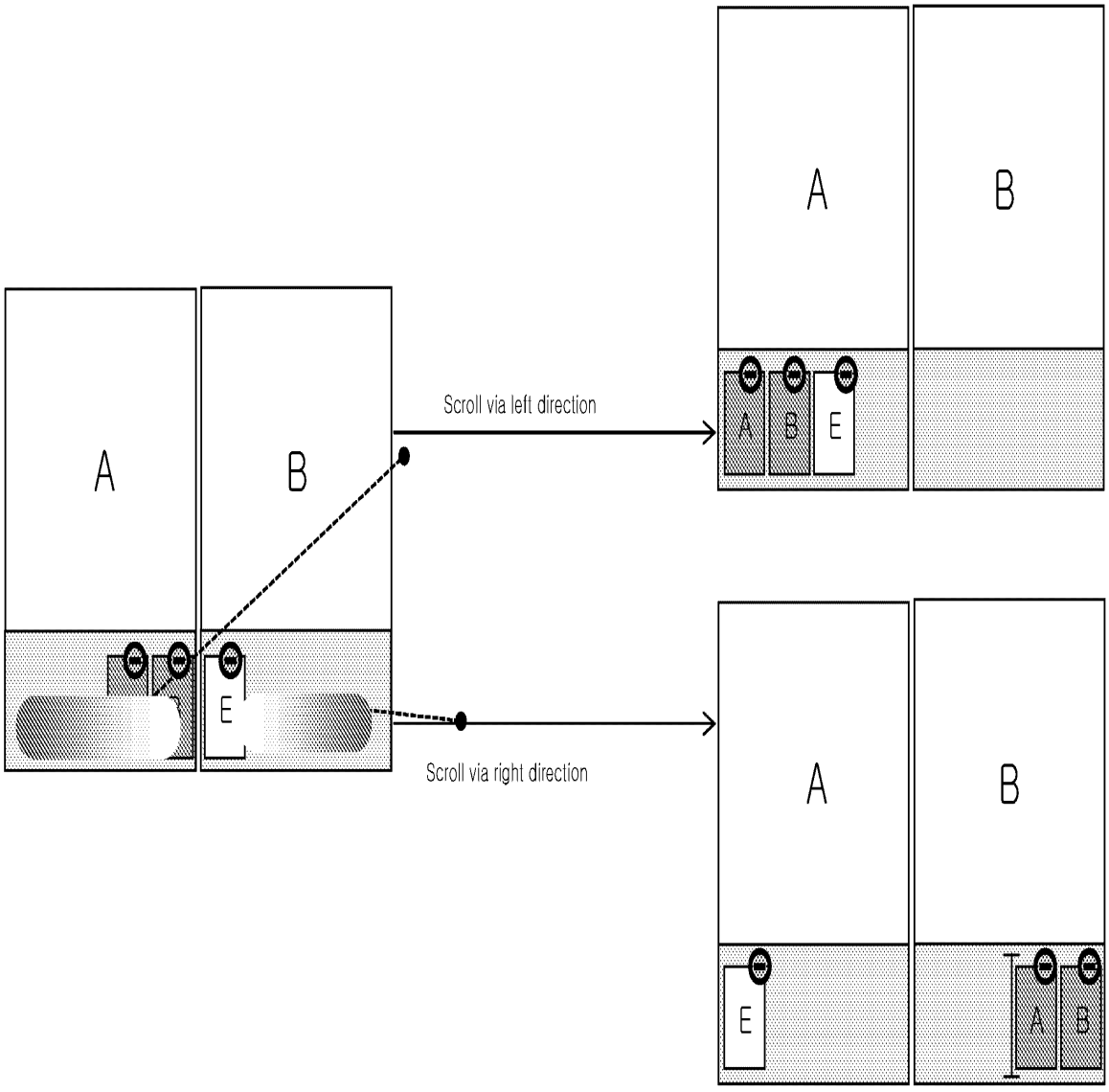
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4.4 Basic Flow

v.1.5 Updated
Application list Scrolling Rule Updated

- **User can scroll App list at left/right screen.**
- App list could be rotated via left and right direction.

1. Less than 8 App



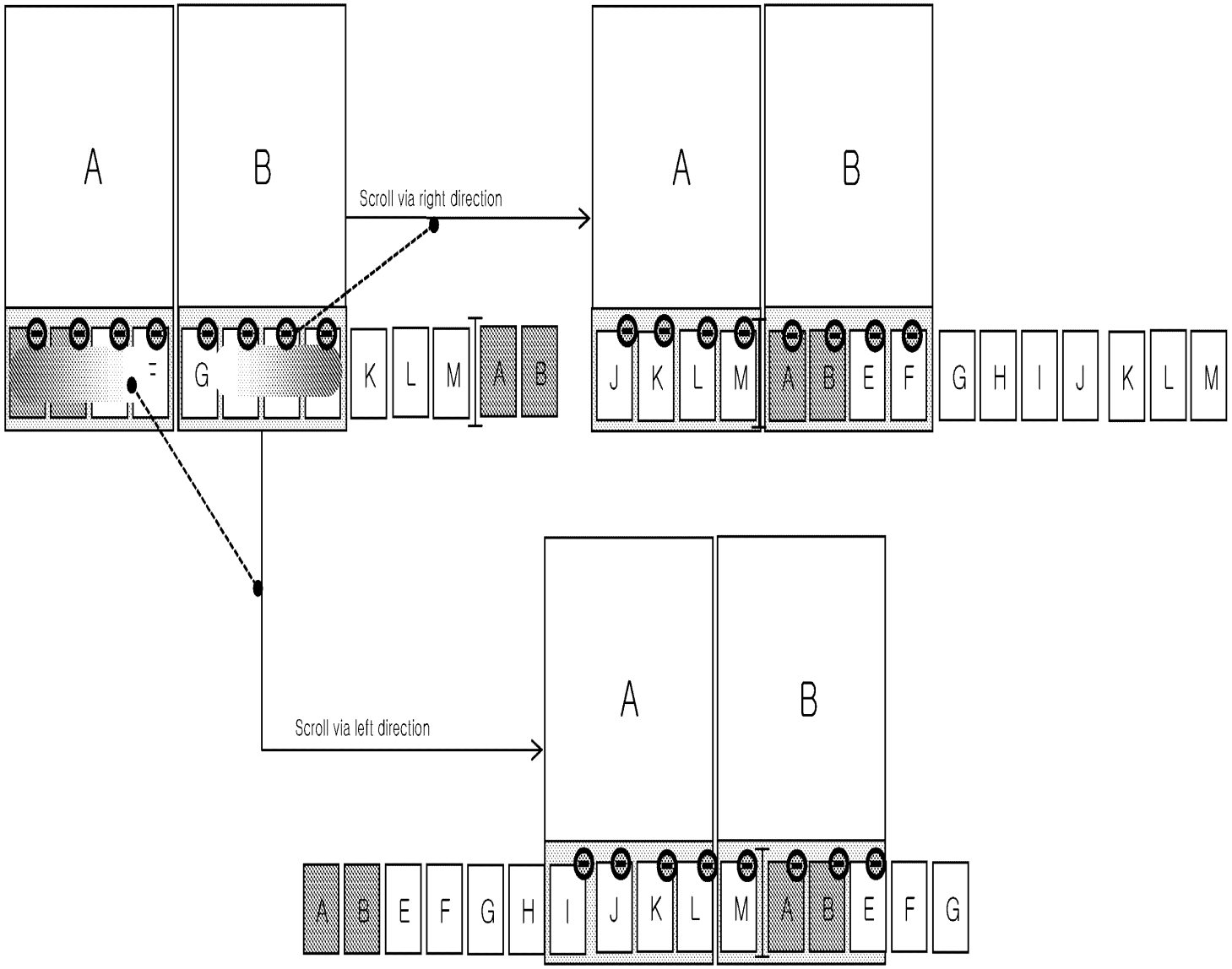
© 2010 SAMSUNG Electronics. All rights reserved.

4.4 Basic Flow

v.1.5 Updated
Application list Scrolling Rule Updated

- **User can scroll App list at left/right screen.**
- App list could be rotated via left and right direction.

2. More than 8 App

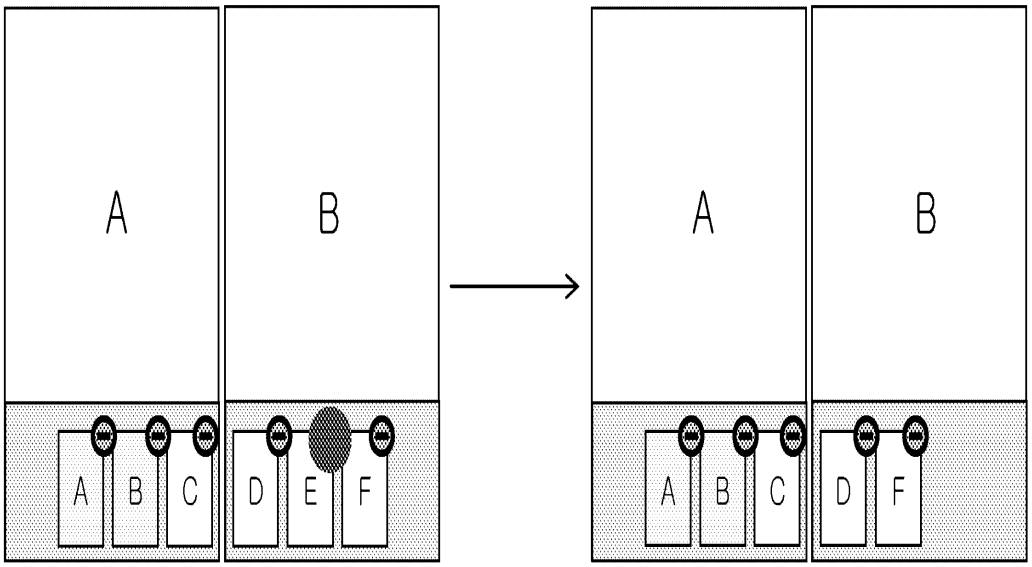


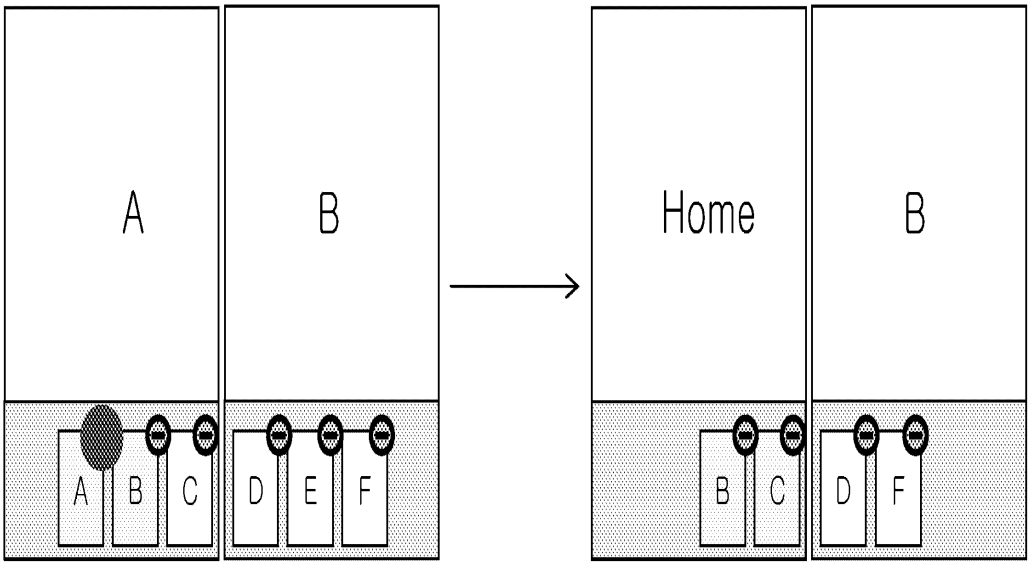
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4.4 Basic Flow

v.1.5 Updated
Application Closing Rule Updated

- User can close applications



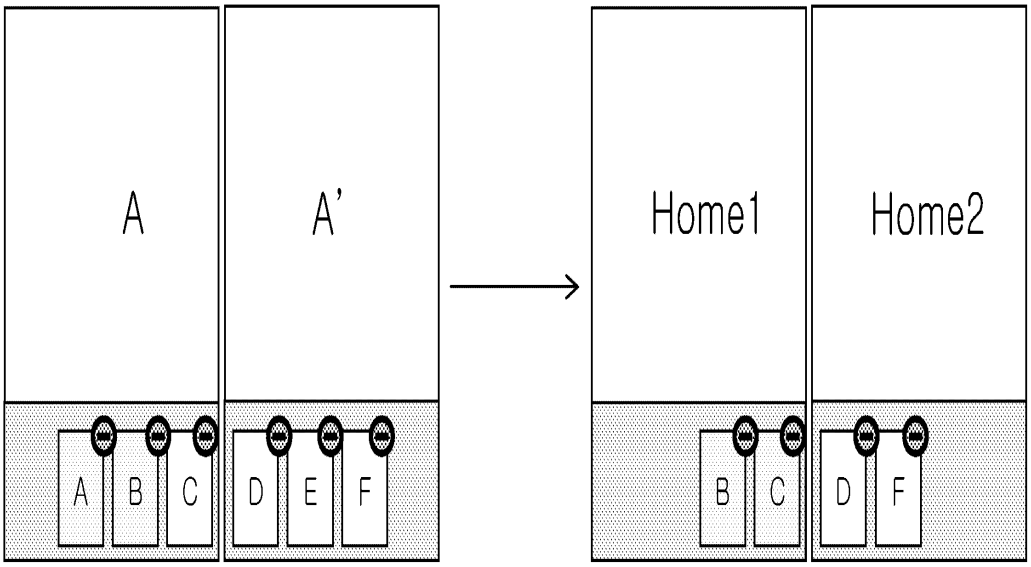


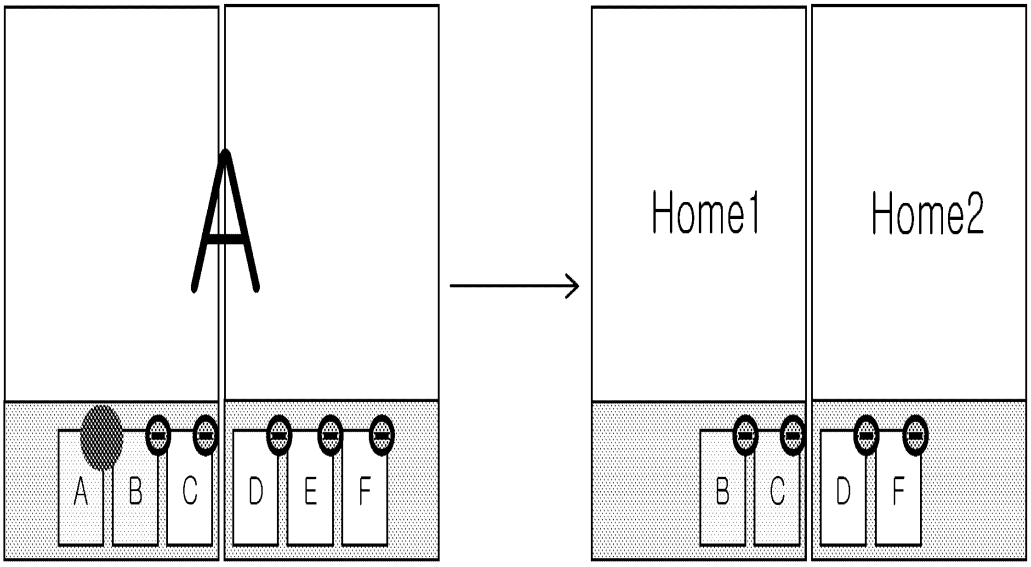
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4.4 Basic Flow

v.1.5 Added
Application Closing Rule for Split & Expand Mode Added

- User can close applications





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v.1.5 Updated
Gesture Rule Updated
Gesture only support Mode Change, not support Task switching

v.1.6 Updated
Titles and interaction rules of layout modes Updated

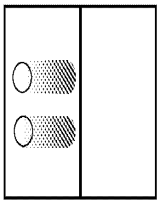
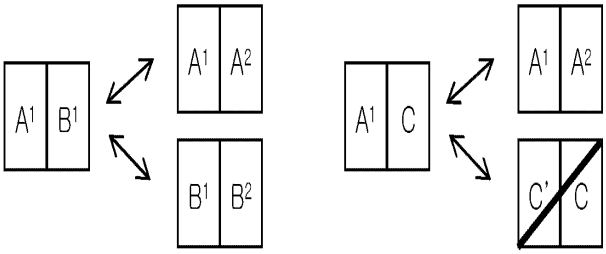
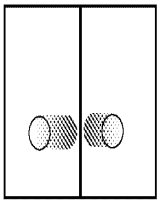
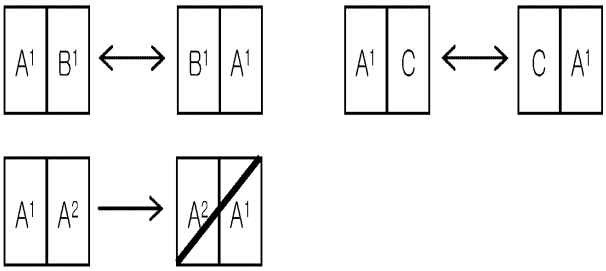
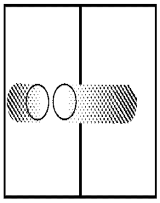
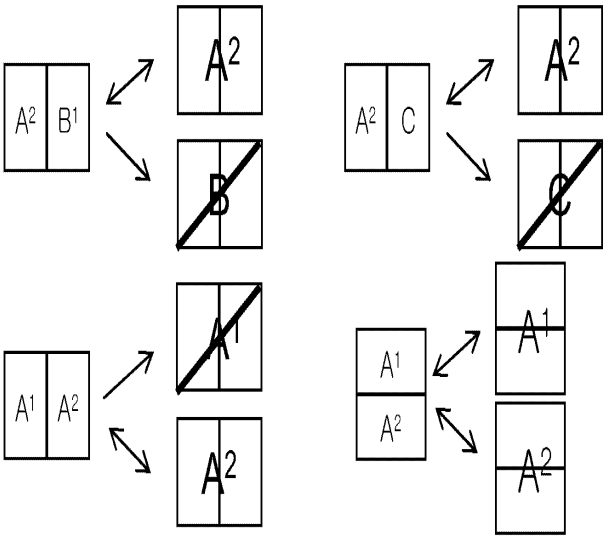
Gesture Mode Change

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5. Gesture Mode Change

5.1 Definition of Gesture

● Gesture Interaction

Type		Description	Use cases
Split-mode(A/B) ←→ Expand-mode(A+)		Two finger touch input in one screen and Drag to the other screen. Split-mode(A/B) → Expand-mode(A+) or Expand-mode(A+) → Split-mode(A/B) Horizontal Mode is same rule	
Swapping		Two finger touch input in another screen and Drag to hinge. This gesture is possible only at Multi-tasking mode . Horizontal Mode is same rule.	
Dual Zoom(A++)		Start pinch zoom-in in same screen and end one finger is in same screen but another finger is in different screen. Single screen pinch zoom-in : contents zoom-in (Photo, Web Browser, Map) Dual screen pinch zoom-in : contents zoom-in over two screens(Photo, Web Browser, Map, ...) Dual zoom (A++) could be changed to previous screen layout : Two finger touch input in different screen and do pinch zoom-out to same screen Horizontal Mode is same rule	

A : Application Support Expand Mode
(A1 : First Depth like Contents List, A2 : Contents that could be zoom in over two screens like Photo contents)
B : Application Support Expand Mode
(B1 : First Depth like Contents Group, B2 : Second Depth like Contents List)
C : Application only support Split Mode

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5. Gesture Mode Change

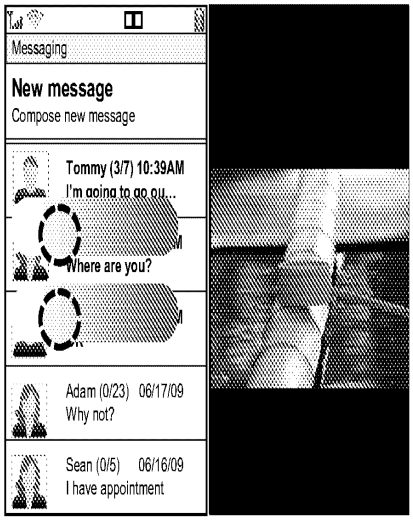
5.1 Definition of Gesture

v.1.5 Updated
Gesture Rule for transit between Split-mode & Split mode Updated
Gesture only support Mode Change, not support Task switching

v.1.6 Updated
Titles of Layout mode changed

- Split-mode(A/B) ← → Dual-mode(A+)
- User can change mode using view mode button of quick panel or two finger flick gesture.
- View mode is dependent on current view mode and displayed App.

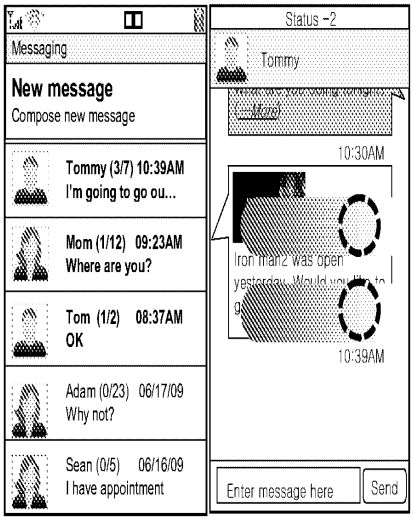
Split-mode(A/B)



A : Message App

B' : Gallery App

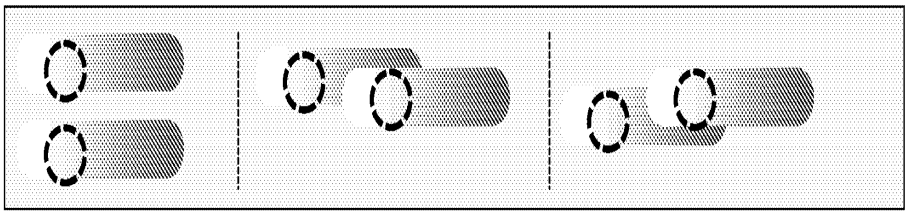
Dual-mode(A+)



A : Message App

A' : Next depth of A

Two finger flick gesture



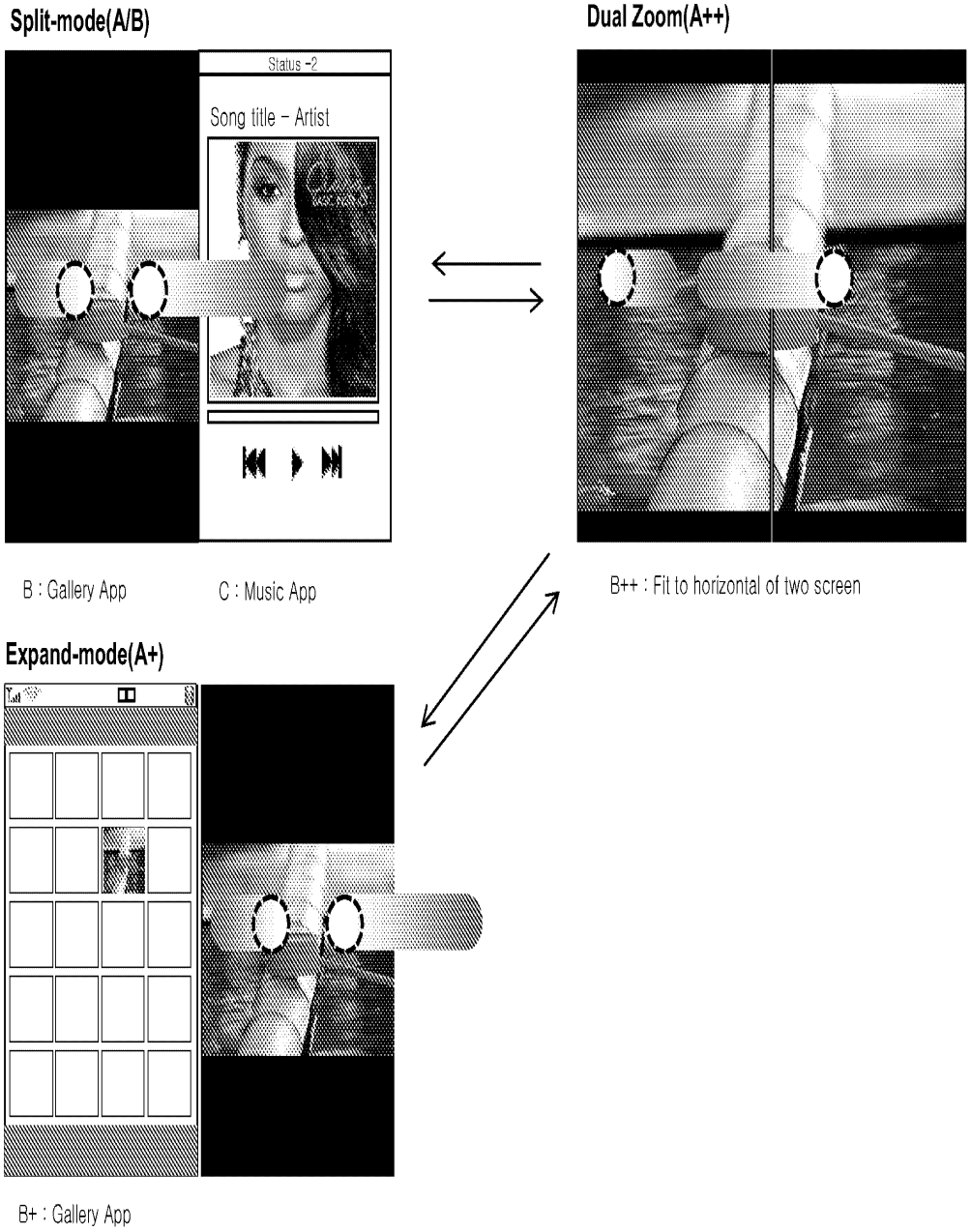
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5. Gesture Mode Change

5.1 Definition of Gesture

● Dual Zoom(A++)

- User can change mode using view mode button of quick panel or pinch zoom.
- View mode is dependent on current view mode and current displayed App.



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5. Gesture Mode Change

5.1 Definition of Gesture

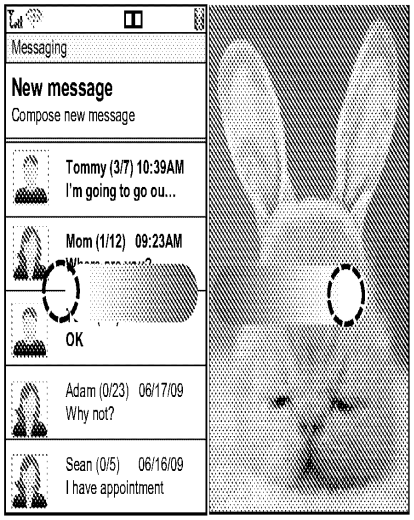
- Split-mode(A/B) Swapping

- User can swap using view mode button of quick panel or two screen touch & move to hinge.

Swapping supported only Two Application Displayed

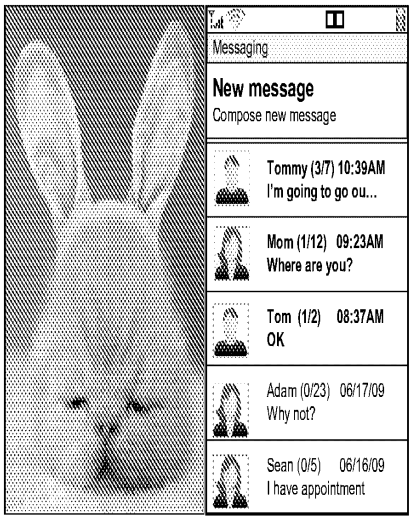
Only Split-mode available.
Two finger touch at same time.

Split-mode(A/B)



A : Message App B' : Gallery App

Split-mode(A/B)



B' : Gallery App A : Message App

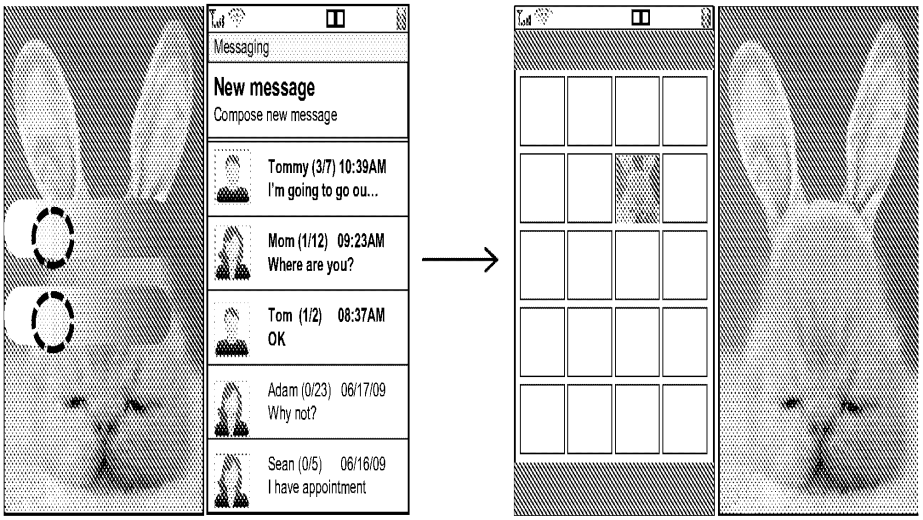
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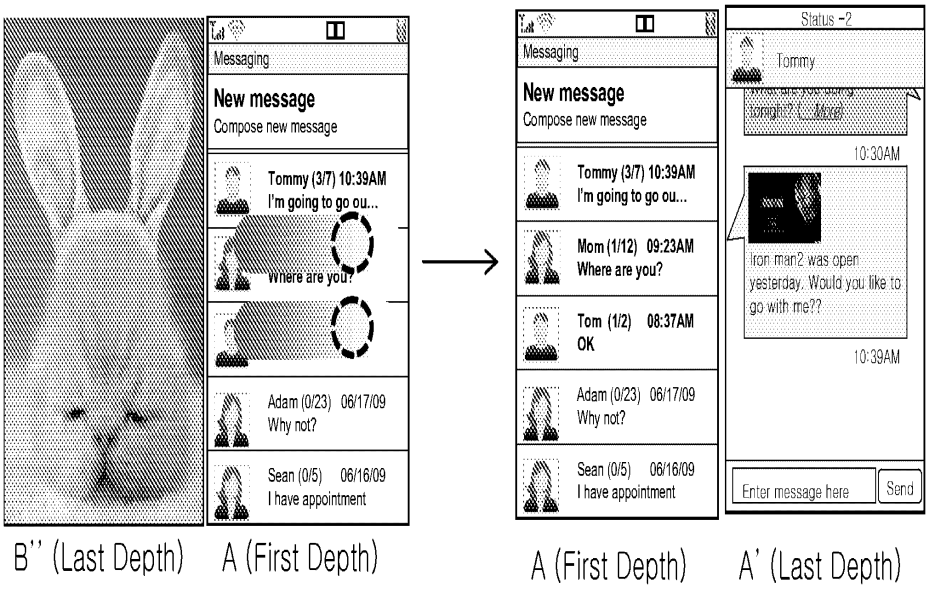
5. Gesture Mode Change

5.2 Basic Flow | Split-mode to Expand-mode

- Split-mode(A/B) ← → Expand-mode(A+) Gesture
- This Gesture only available View mode change. Task Change doesn't Support.
- Touch one screen & Drag to hinge.
- Touched screen is expanded.

v.1.5 Updated
Gesture Rule for transit between Split-mode & Split mode Updated
Gesture only support Mode Change, not support Task switching





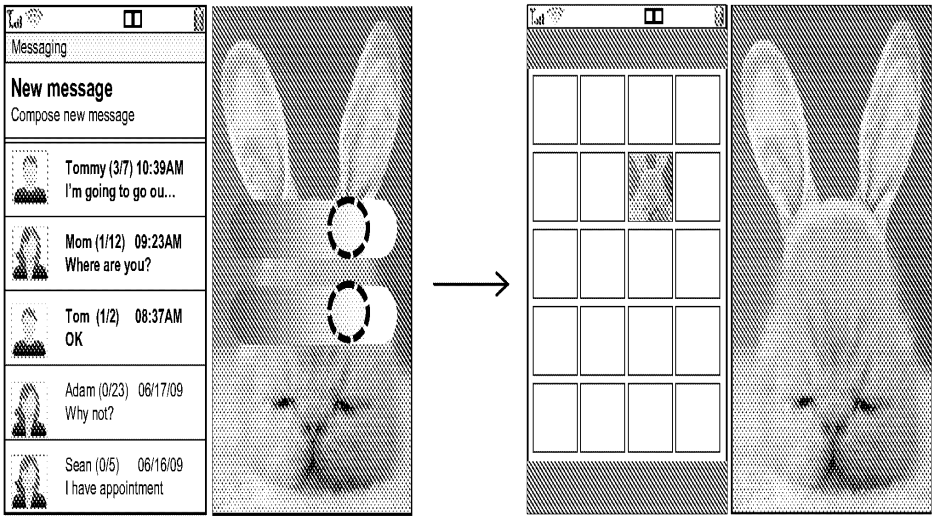
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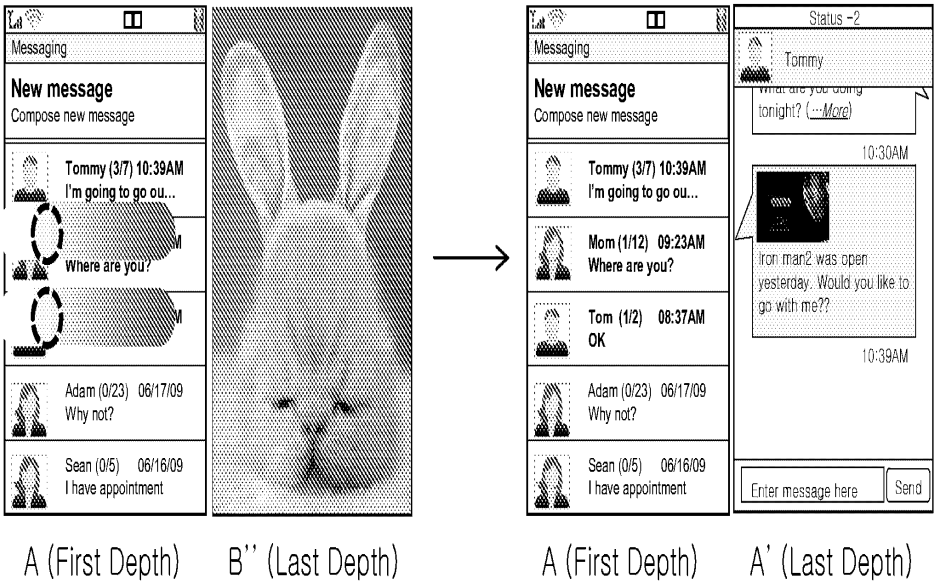
5. Gesture Mode Change

5.2 Basic Flow | Split-mode to Expand-mode

- Split-mode(A/B) ← → Expand-mode(A+) Gesture
- Displayed on the left is former depth.
- Exceptional Case : When the second screen is Last depth of an App or the first screen is First depth of the App

v.1.5 Updated
Gesture Rule for transit between Split-mode & Split mode Updated
Gesture only support Mode Change, not support Task switching





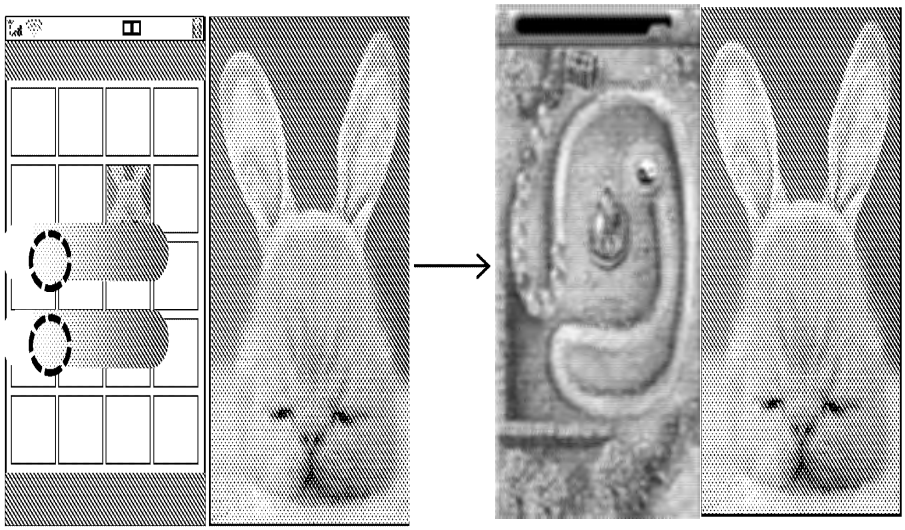
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5. Gesture Mode Change

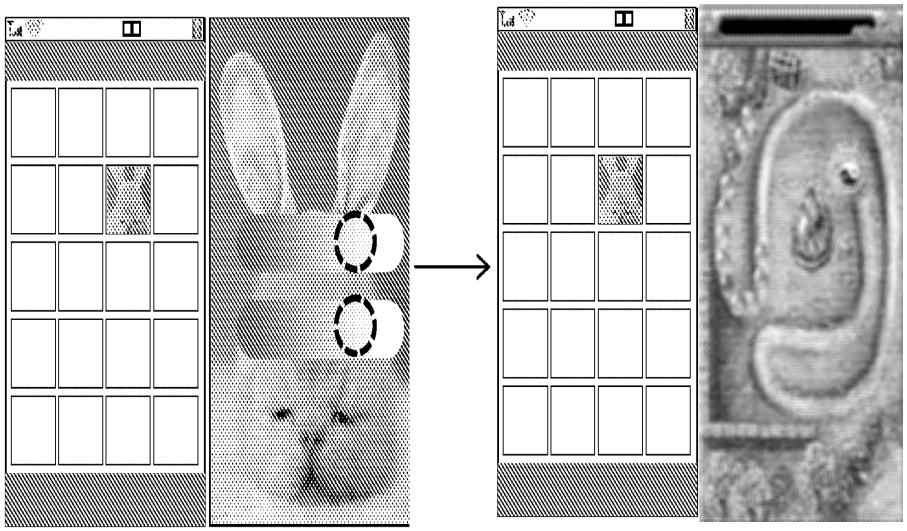
5.2 Basic Flow | Split-mode to Expand-mode

● Expand-mode(A/A') ← → Split-mode(A/B) Gesture
- User can change view mode. 'Two Finger Drag' from selected screen to hinge.
- last screen of previous application is displayed.

v.1.5 Updated
Gesture Rule for transit between Split-mode & Split mode Updated
Gesture only support Mode Change, not support Task switching



Expand-mode(A+) Split-mode(B/A')



Expand-mode(A+) Split-mode(A/B)

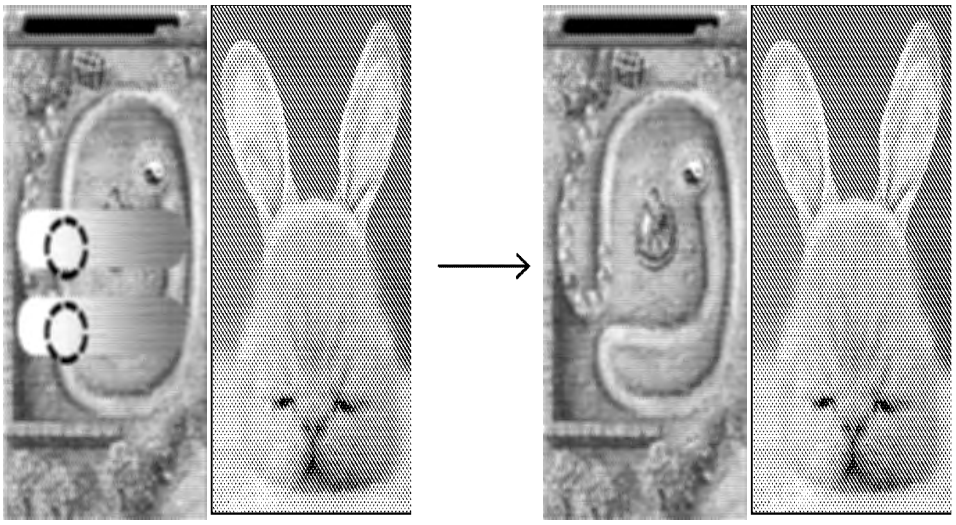
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5. Gesture Mode Change

5.2 Basic Flow | Split-mode to Expand-mode

v.1.5 Updated
Gesture Rule for transit between Split-mode & Split mode Updated
Gesture only support Mode Change, not support Task switching

- Doesn't Support Task Change.



3rd party App
(not support Split-mode)

Does not change

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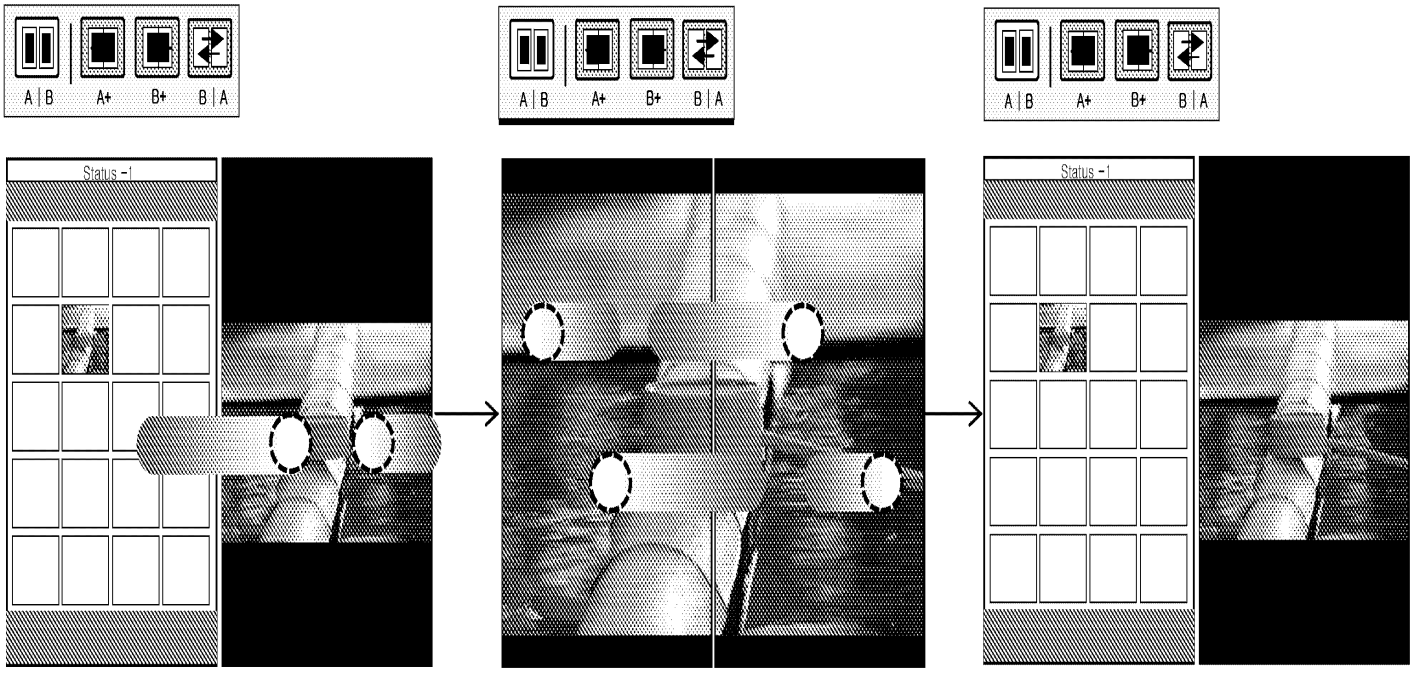
5. Gesture Mode Change

5.3 Basic Flow | Dual Zoom

v.1.6 Added
On Dual-mode, Dual zoom contents by Gesture added

● Expand-mode(A+) : Dual Zoom Contents by Gesture
- When two finger 'pinch zoom-in' above hinge at Dual-mode, expand the target contents over two screens.
- Dual zoom is spread from start screen of 'pinch zoom-in'.
- Quick panel is not changed when the contents expanding

Expand-mode(A+) | **Expand-mode(A+) : Dual Zoom** | **Expand-mode(A+)**



- Quick panel is not changed when the contents expanding

Not available Available

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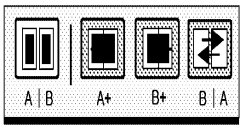
5. Gesture Mode Change

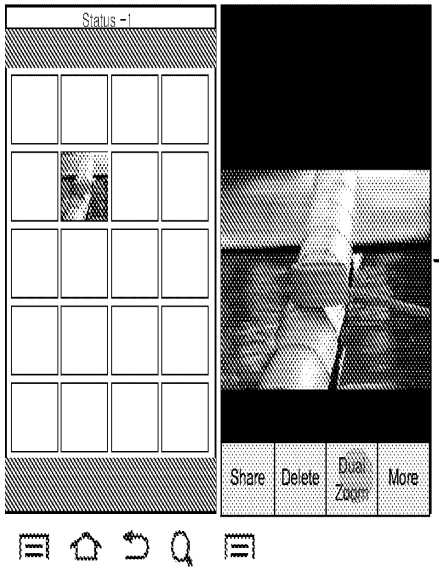
5.3 Basic Flow | Dual Zoom

v.1.6 Added
On Dual-mode, Dual zoom contents by Option menu added

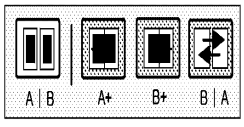
● Expand-mode(A+) : Dual Zoom Contents by Option menu
- When select Expand menu on the option menu, expand the target contents over two screens.
- Dual zoom is spread from the selected screen.
- Quick panel is not changed when the contents expanding

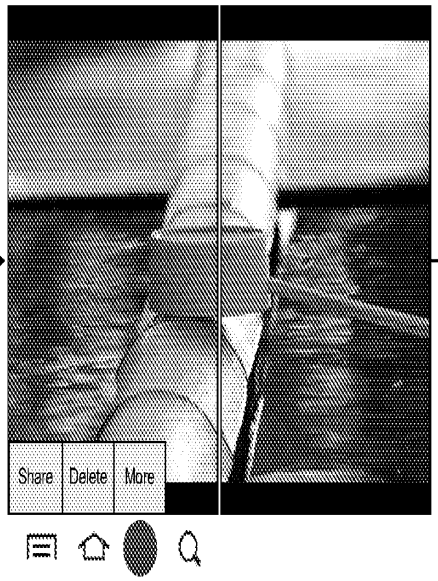
Expand-mode(A+)



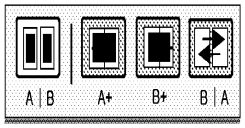


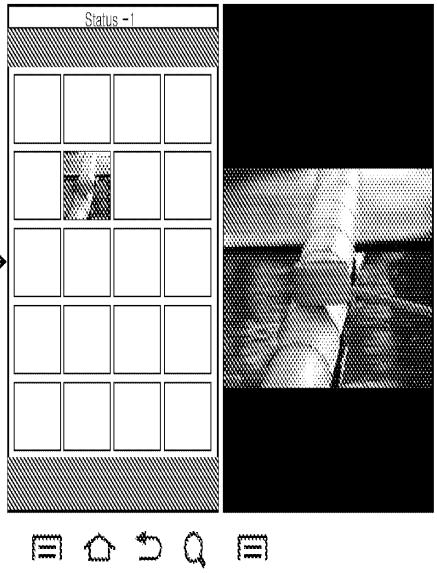
Expand-mode(A+) : Dual Zoom





Expand-mode(A+)





- Quick panel is not changed when the contents expanding

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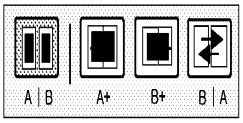
5. Gesture Mode Change

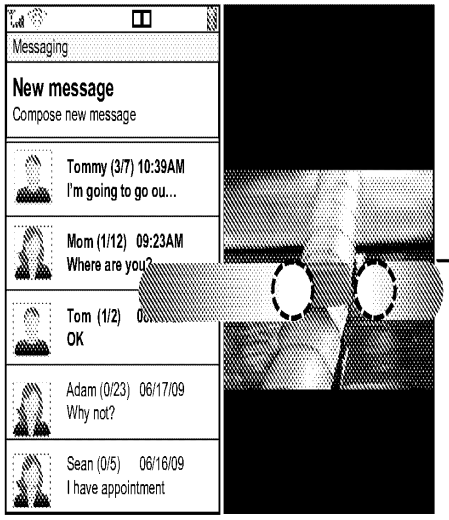
5.3 Basic Flow | Dual Zoom

v.1.6 Added
On Split-mode, Dual zoom contents by Gesture added

● Split-mode(A/B) : Dual Zoom Contents by Gesture
- When two finger 'pinch zoom-in' above hinge at Split-mode, expand the target contents over two screens.
- Dual zoom is spread from start screen of 'pinch zoom-in'.
- Quick panel is not changed when the contents expanding
- When back to Split-mode, screen position is not dependent on release position and task location.

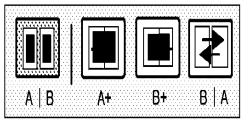
Split-mode(A/B)

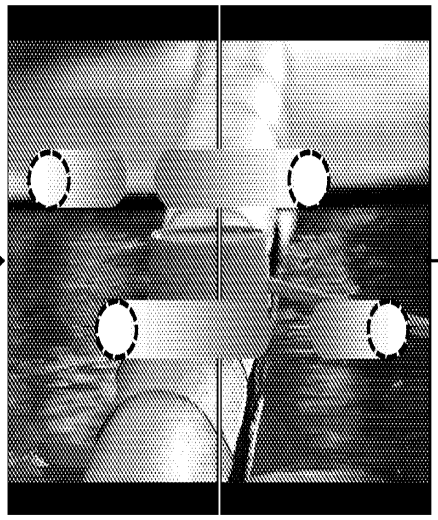




A : Message App B' : Gallery App

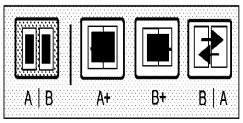
Split-mode(A/B) : Dual Zoom

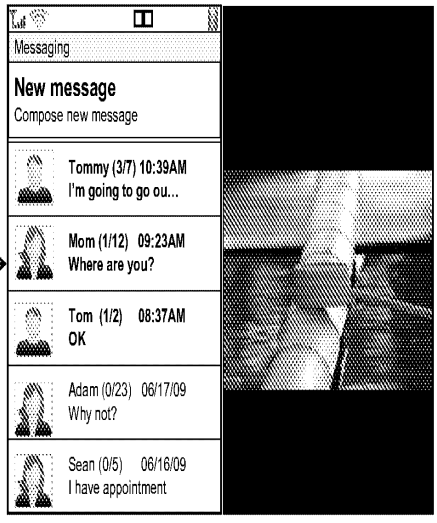




- Quick panel is not changed when the contents expanding

Split-mode(A/B)





A : Message App B' : Gallery App

- When back to Split-mode, screen position is not dependent on release position and task location.

Not available Available

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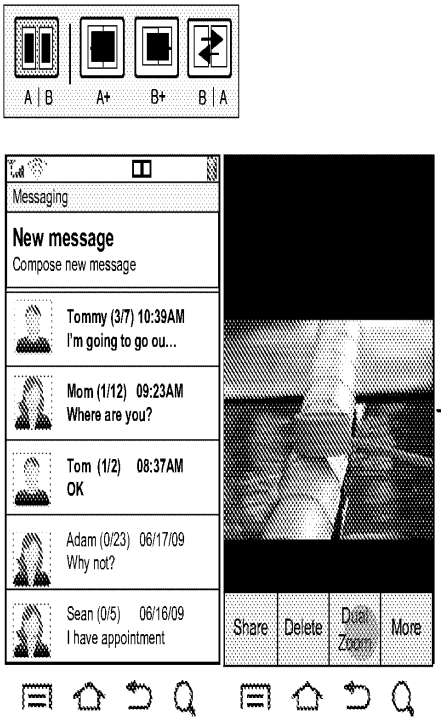
5. Gesture Mode Change

5.3 Basic Flow | Dual Zoom

v.1.6 Added
On Split-mode, Dual zoom contents by Option menu added

● Split-mode(A/B) : Dual Zoom Contents by Option menu
- When select Expand menu on the option menu, expand the target contents over two screens.
- Dual zoom is spread from the selected screen.
- Quick panel is not changed when the contents expanding.
- When back to Split-mode, screen position is not dependent on release position and task location.

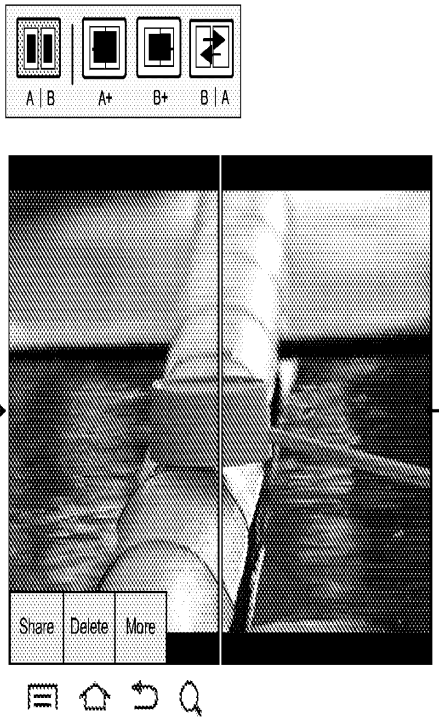
Split-mode(A/B)



A : Message App B' : Gallery App

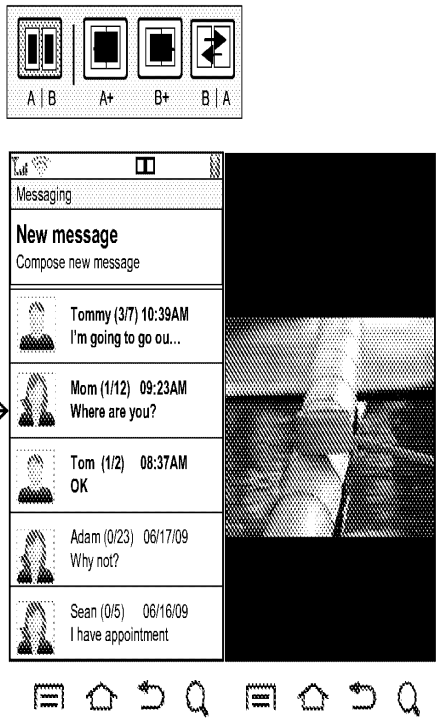
* Layout in the Option menu depends on each application.

Split-mode(A/B) : Dual Zoom



- Quick panel is not changed when the contents expanding

Split-mode(A/B)



A : Message App B' : Gallery App

- When back to Split-mode, screen position is not dependent on release position and task location.

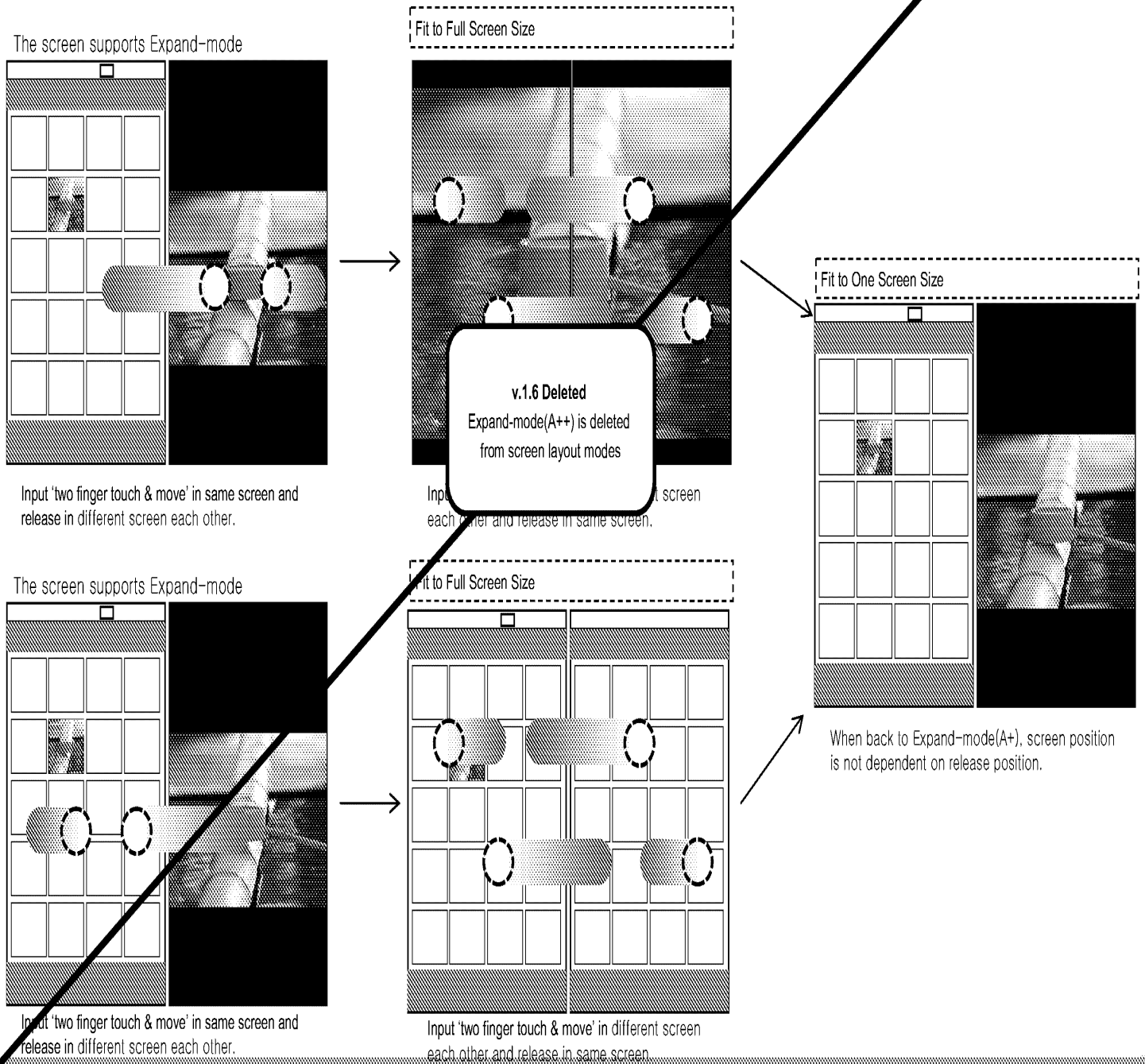
Not available Available

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5. Gesture Mode Change

5.3 Basic Flow | Expand-mode

- Expand-mode(A+) to Expand-mode(A++)
- At Split-mode or Split-mode, Expand mode can use to Pinch Zoom-in gesture cross over a hinge.
- Start screen of gesture are expanded.



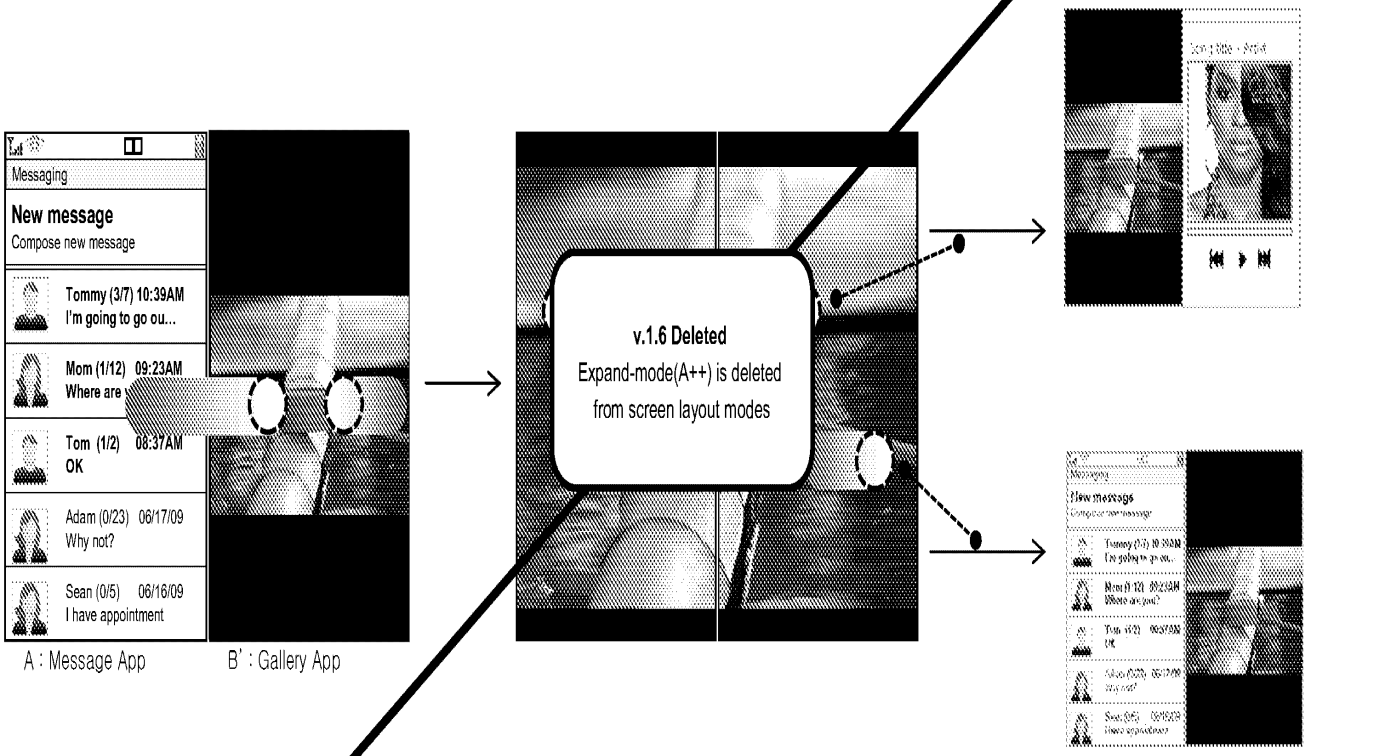
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5. Gesture Mode Change

5.3 Basic Flow | Expand-mode

● Expand-mode(A+) to Expand-mode(A++)

- When two finger 'pinch zoom-in' above hinge at Split-mode, mode is changed to Expand-mode.
- Expand-mode is spread from start screen of 'pinch zoom-in'.
- When back to Split-mode, screen position is dependent on release position and task location.



A : Message App B' : Gallery App

- When back to Split-mode, screen position is dependent on release position and task location.

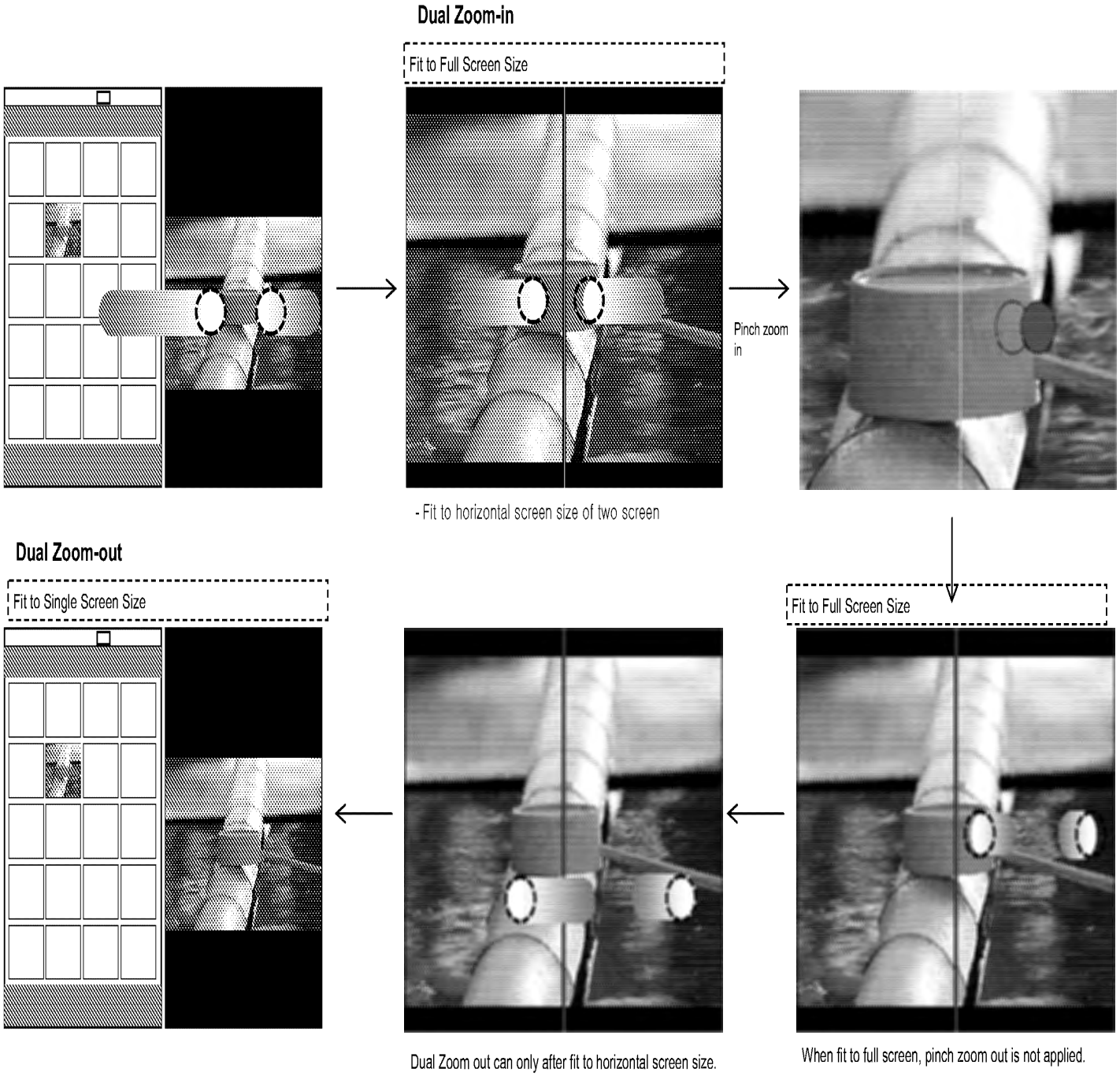
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5. Gesture Mode Change

5.3 Basic Flow | Dual Zoom

- Fit to screen (1/2)

- Fit to horizontal screen size of two screen



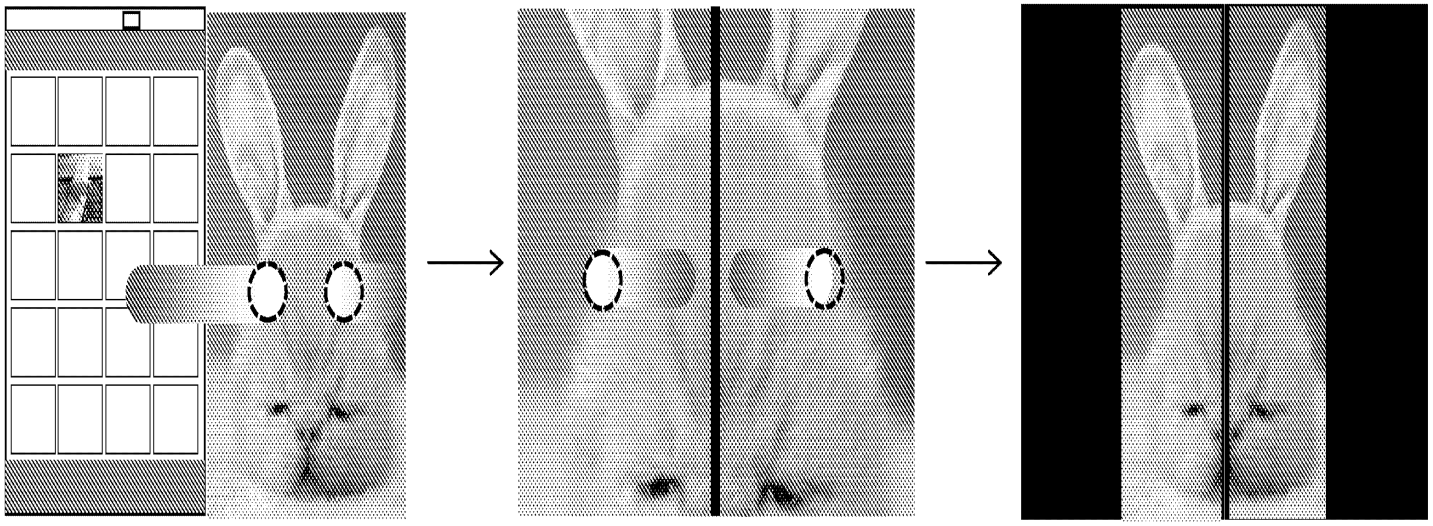
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5. Gesture Mode Change

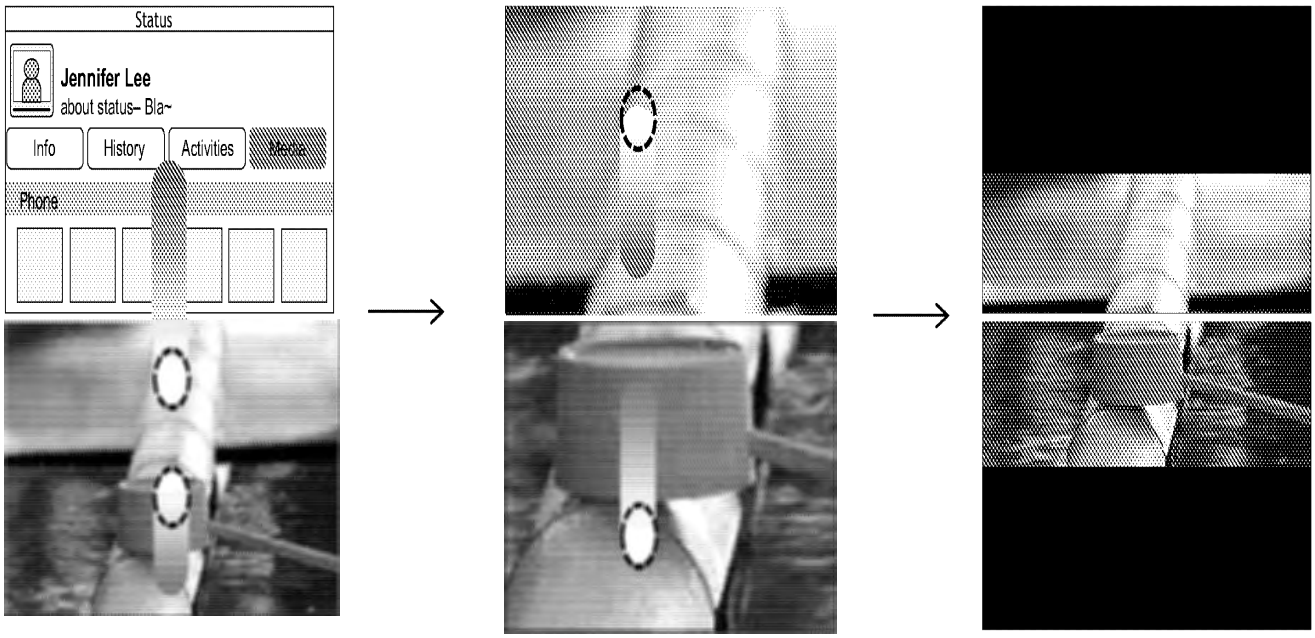
5.3 Basic Flow | Dual Zoom

● **Fit to screen (2/2)**

- In case vertical fit image in portrait mode, Fit to horizontal screen size of two screen.
- In case horizontal fit image in landscape mode , Fit to Vertical screen size of two screen.



- Fit to horizontal screen size of two screen



- Fit to vertical screen size of two screen

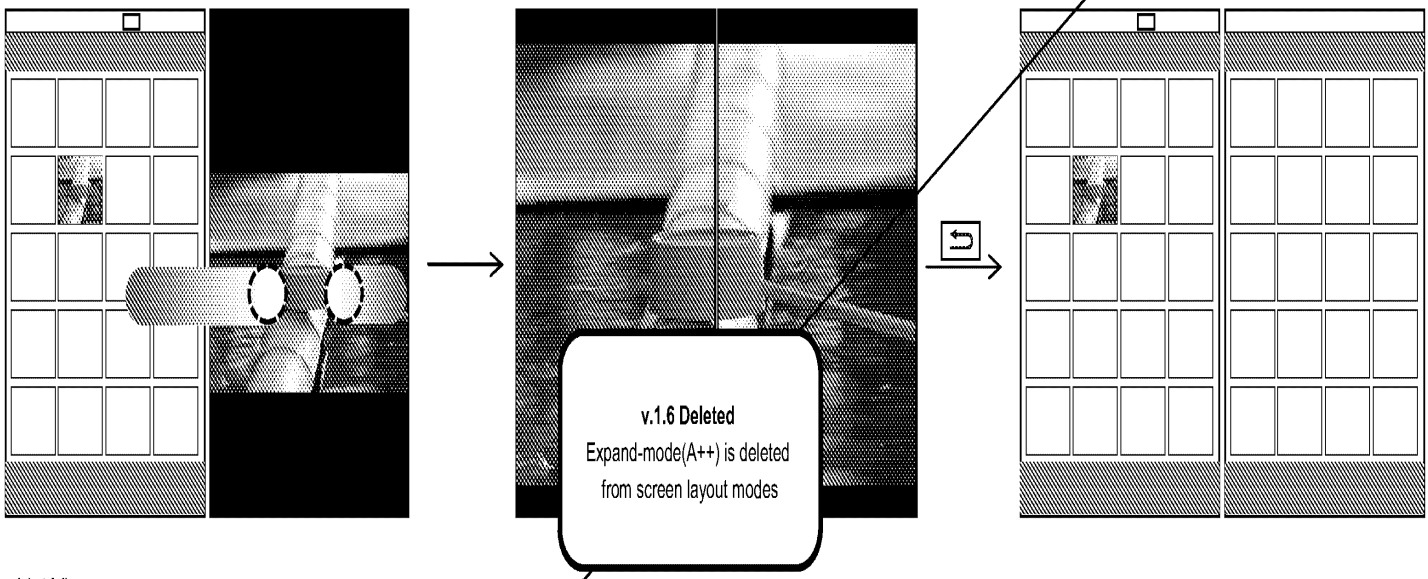
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5. Gesture Mode Change

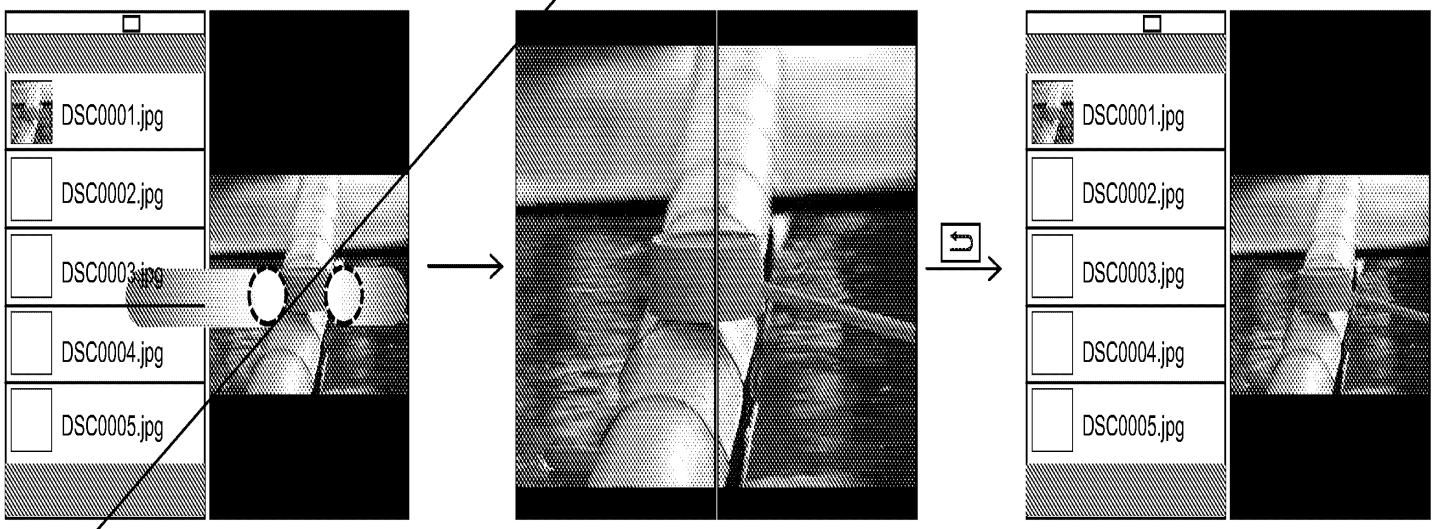
5.3 Basic Flow | Dual Zoom

- Previous depth supports Dual Zoom(A++) :
  When back button is pressed, previous depth is displayed at Expand-mode.
- Previous depth does not support Dual Zoom(A++):
  When back button is pressed, previous depth is displayed at previous layout mode

Grid View



List View



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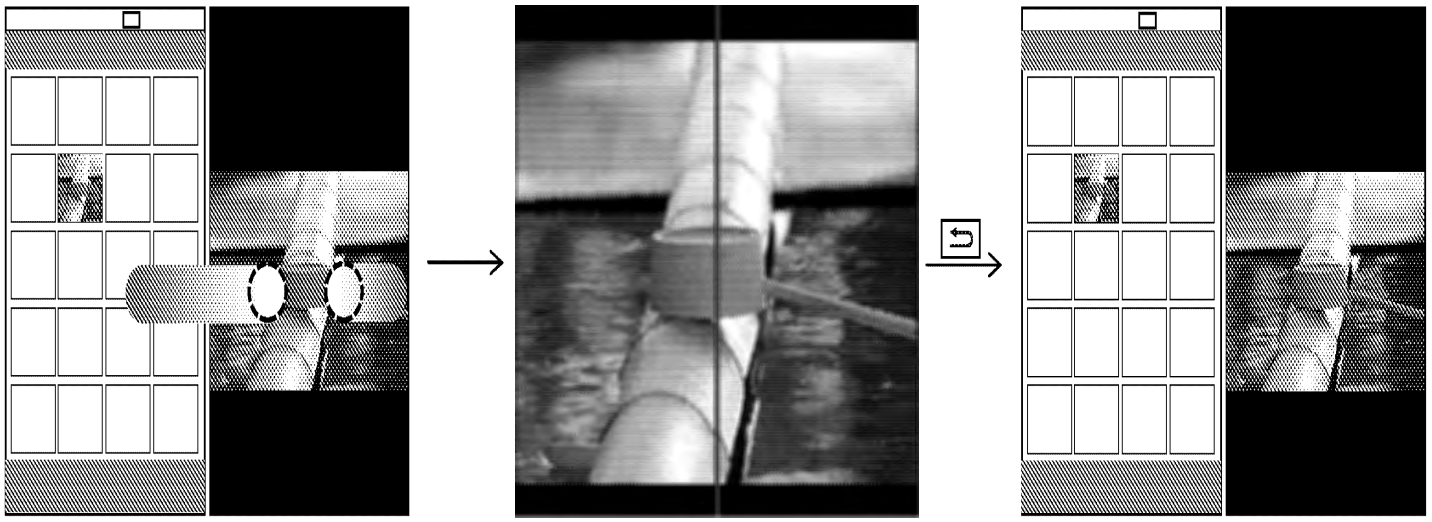
5. Gesture Mode Change

5.3 Basic Flow | Dual Zoom

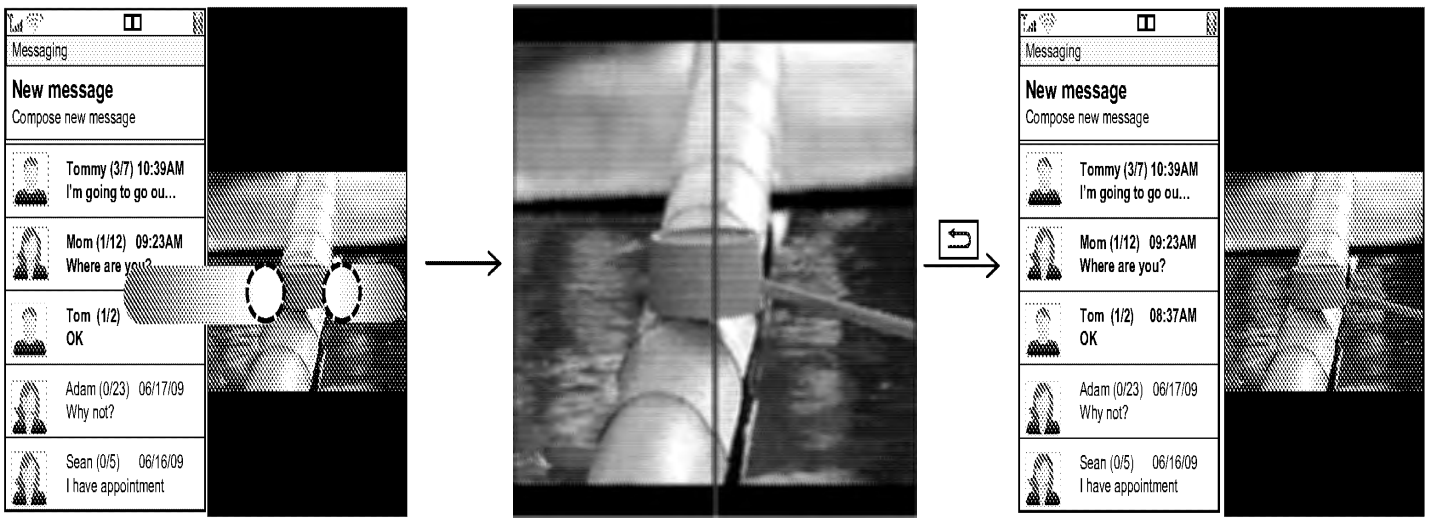
v.1.6 Updated
Back key interaction after Dual zoom is changed

• Press back key after Dual zoom :
When back button is pressed, previous depth is displayed at a previous layout mode.

• Expand-mode(A+)



• Split-mode(A/B)

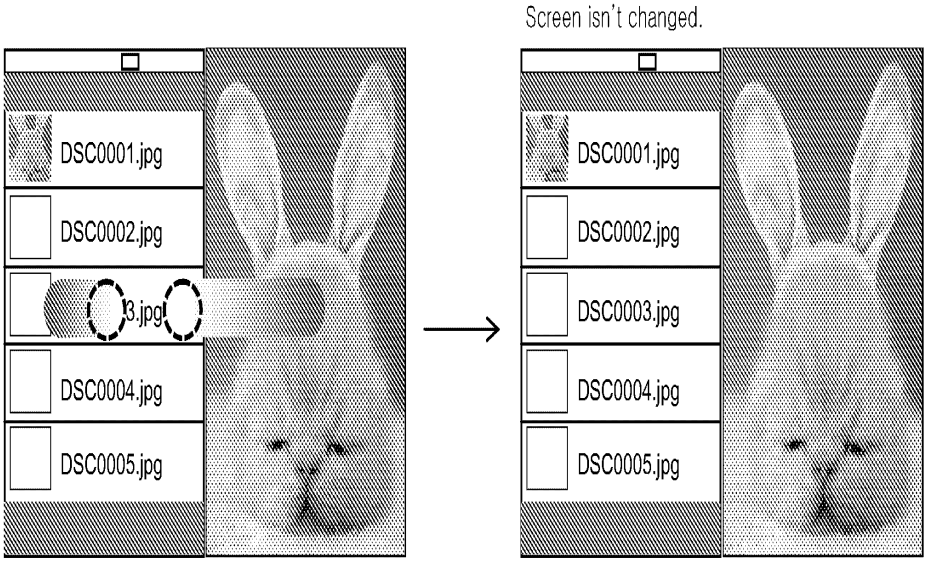


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5. Gesture Mode Change

5.3 Basic Flow | Dual Zoom

• Not support Dual zoom
- When the selected contents doesn't support D, screen isn't changed.



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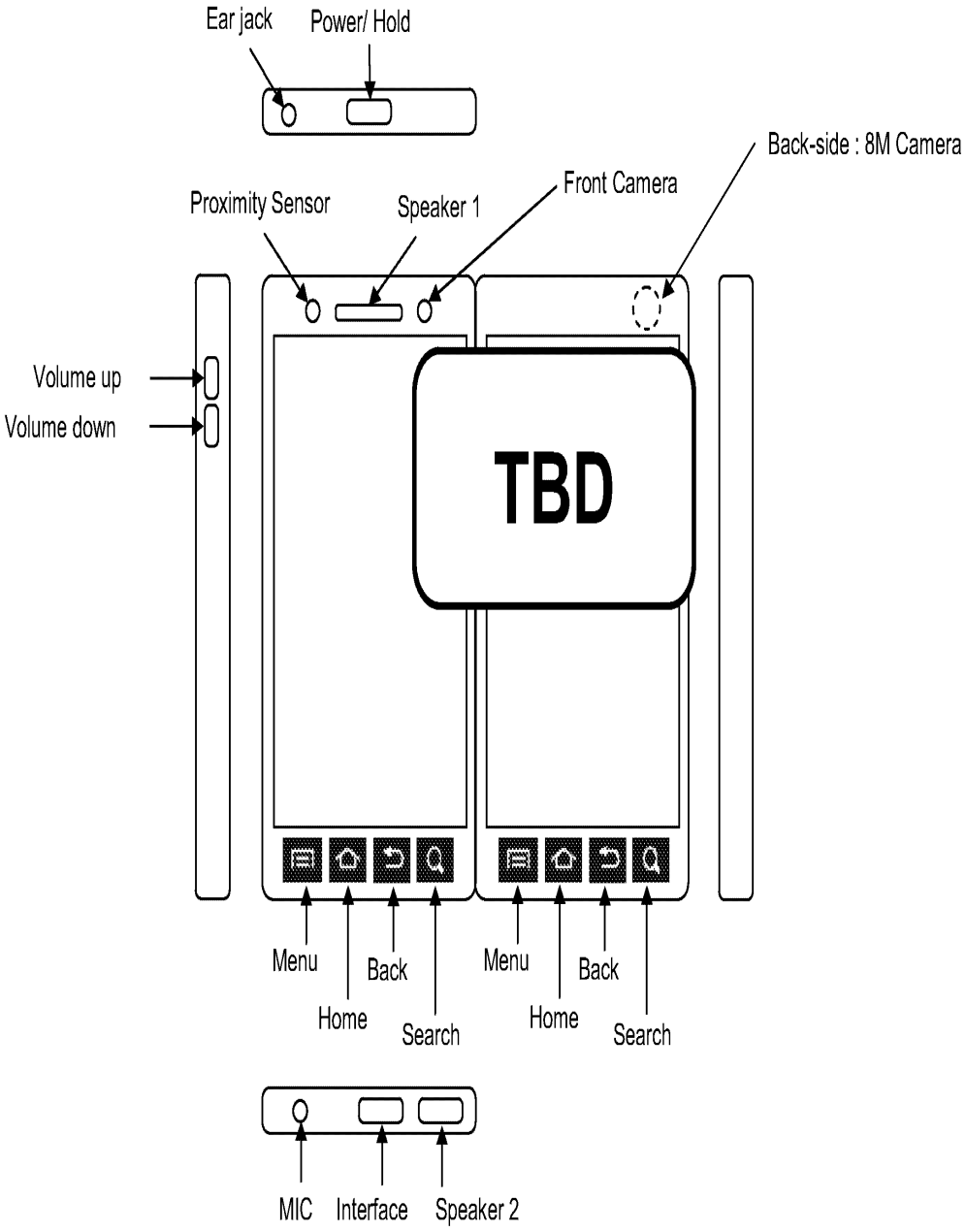
Basic Key Interaction

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6. Basic Key Interaction

6.1 Hard key Layout & Function

• The minimum required buttons for touch phone are described below.

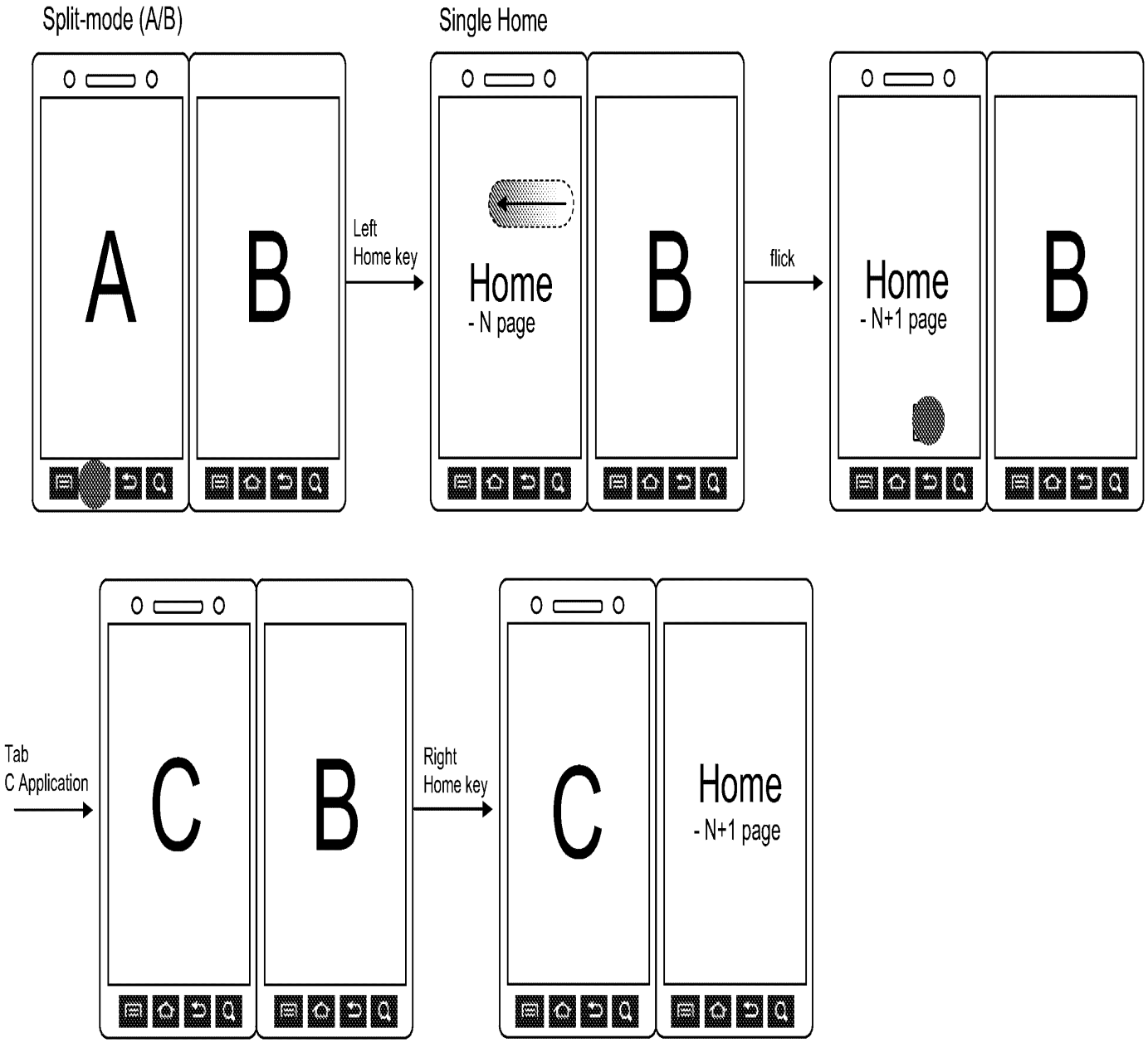


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6. Basic Key Interaction

6.2 Home Key Interaction

• Home key interaction on Split-mode (A/B) (1/2)
- on Split-mode (A/B), Home Key loads single home screen.

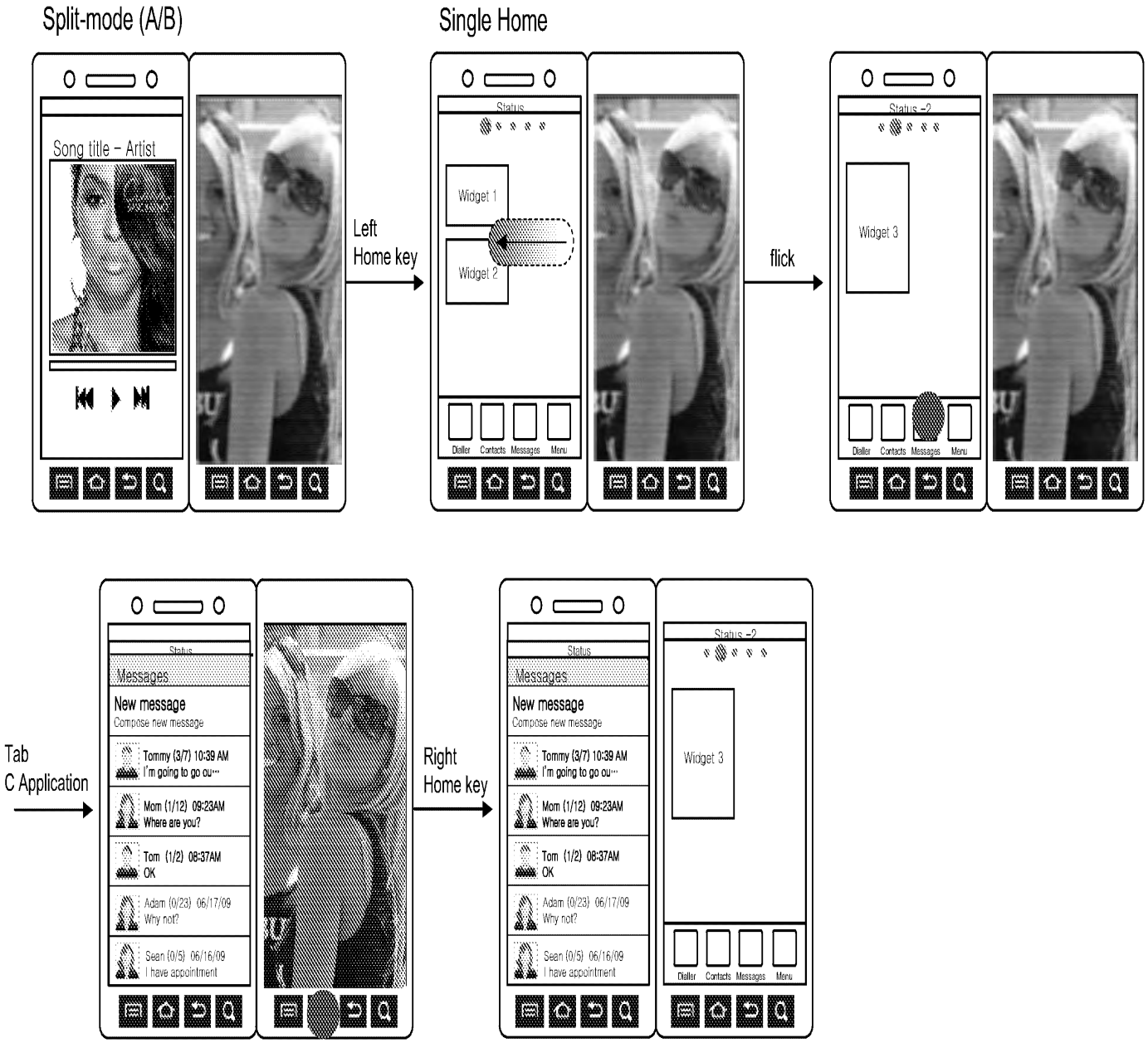


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6. Basic Key Interaction

6.2 Home Key Interaction

• Home key interaction on Split-mode (A/B) (1/2) | Example
- on Split-mode (A/B), Home Key loads single home screen.



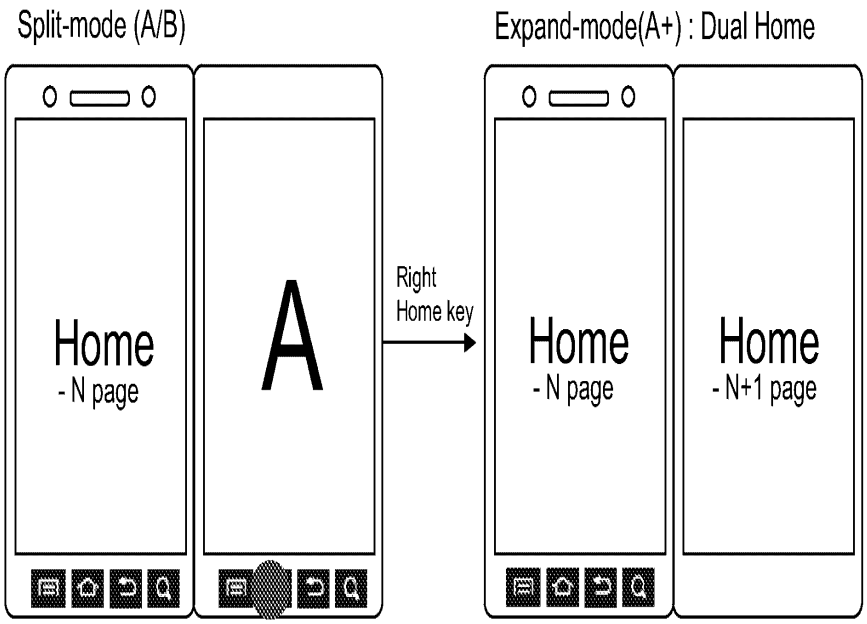
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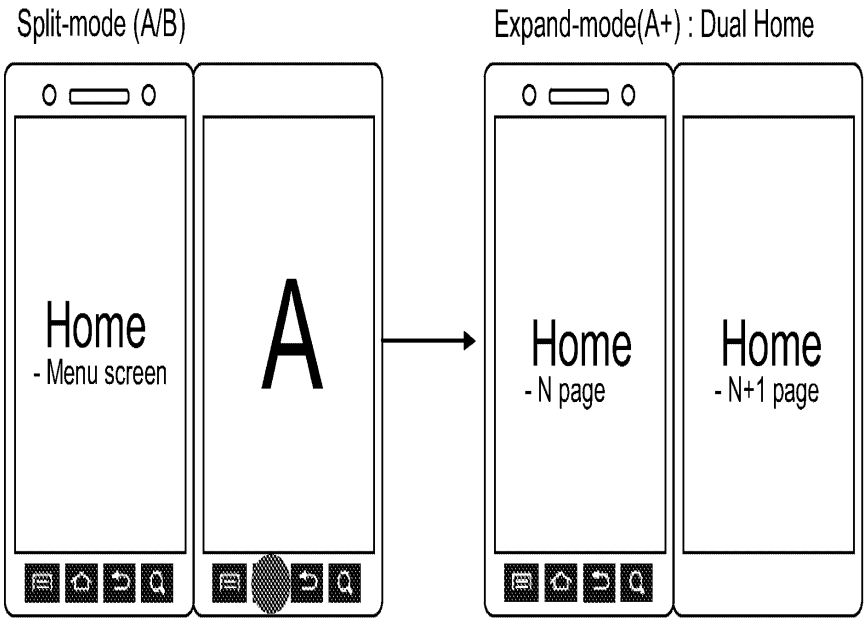
6. Basic Key Interaction

6.2 Home Key Interaction

• Home key interaction on Split-mode (A/B) (2/2)

- When one screen is home screen on Split-mode (A/B), other Home Key loads dual home screen.





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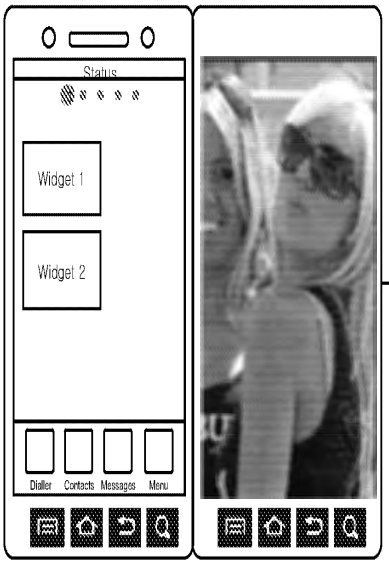
6. Basic Key Interaction

6.2 Home Key Interaction

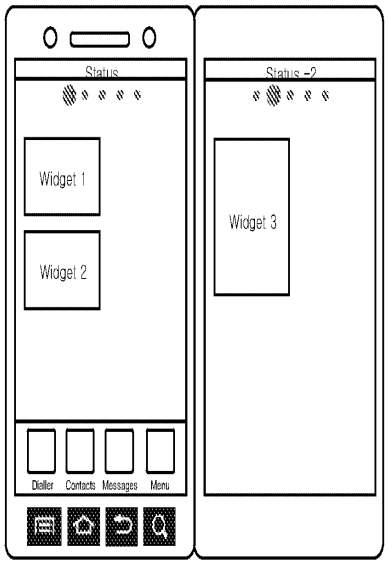
• Home key interaction on Split-mode (A/B) (2/2) | Example

- When one screen is home screen on Split-mode (A/B), other Home Key loads dual home screen.

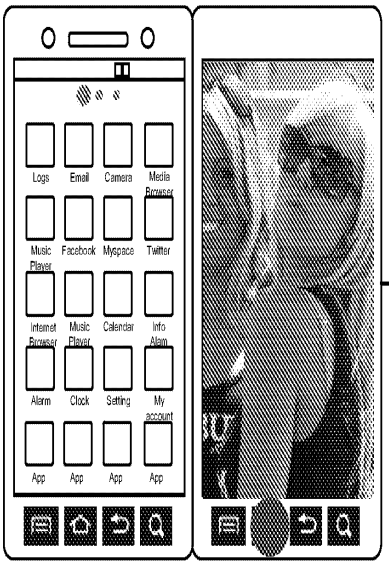
Split-mode (A/B)



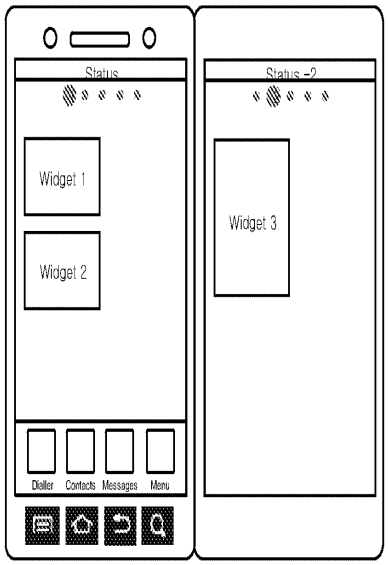
Expand-mode(A+) : Dual Home



Split-mode (A/B)



Expand-mode(A+) : Dual Home

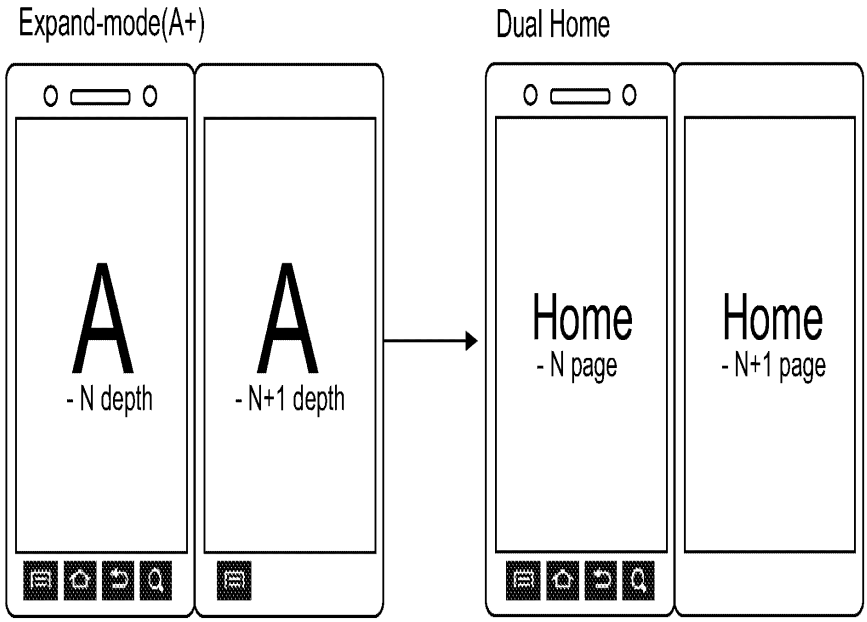


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6. Basic Key Interaction

6.2 Home Key Interaction

• Home key interaction on Expand-mode(A+) :
- Expand-mode(A+), Home Key loads dual home screen.

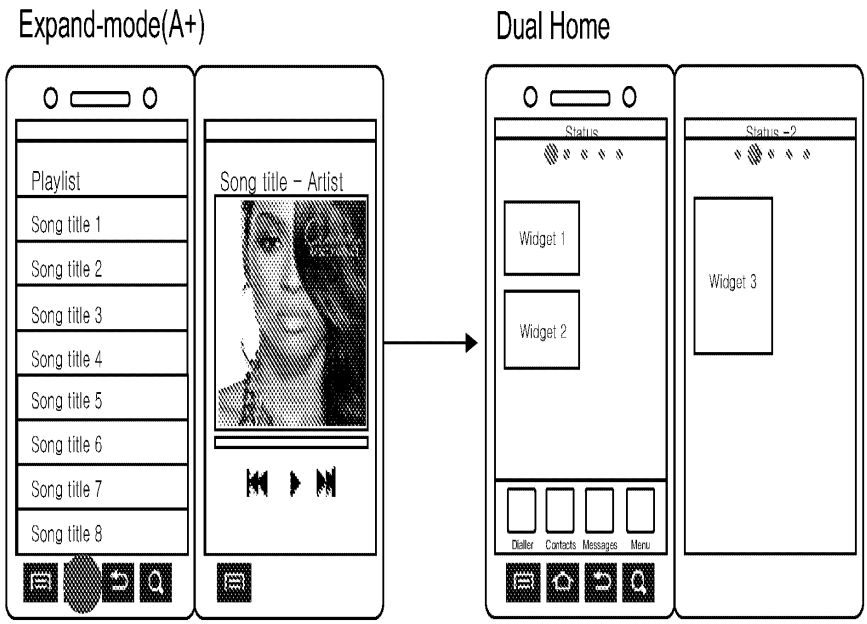


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6. Basic Key Interaction

6.2 Home Key Interaction

• Home key interaction on Expand-mode(A+) | Example
- on Expand-mode(A+), Home Key loads dual home screen.



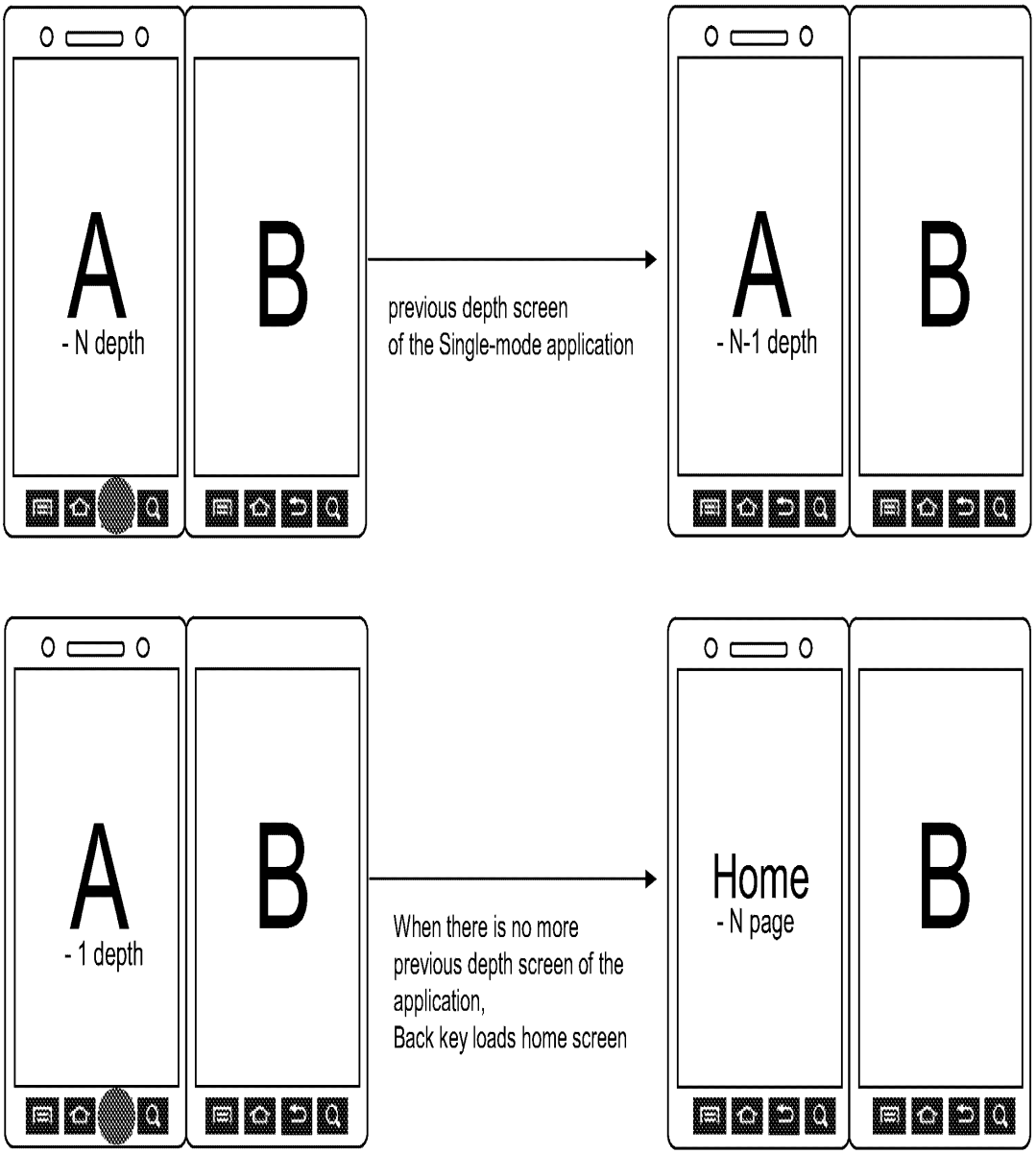
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6. Basic Key Interaction

6.3 Back Key Interaction

• Back key interaction on Split-mode (A/B)
- on Split-mode (A/B), Back Key loads previous depth screen of the single-mode application on the selected screen.

Split-mode (A/B)



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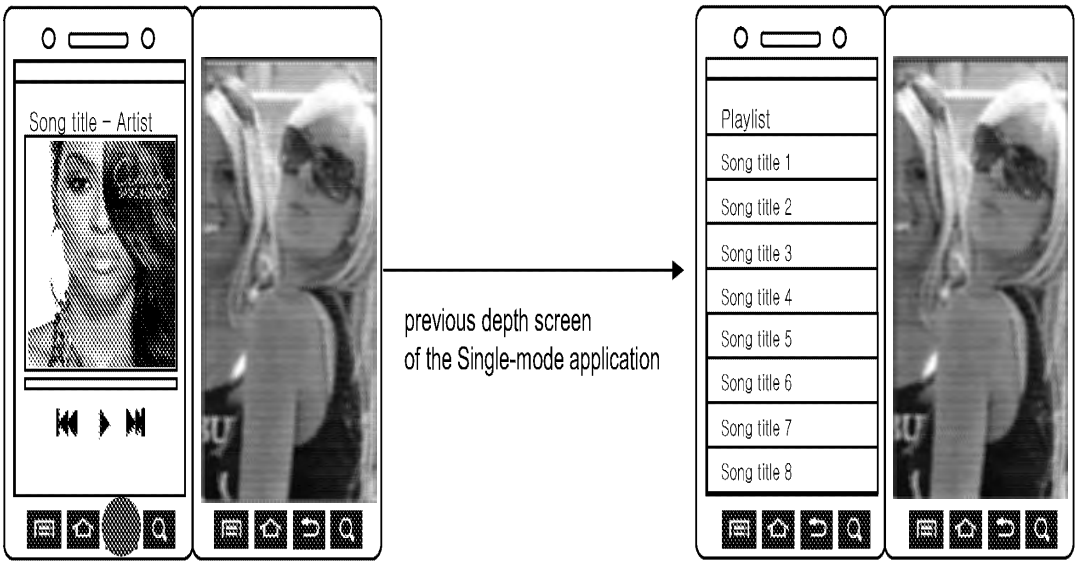
6. Basic Key Interaction

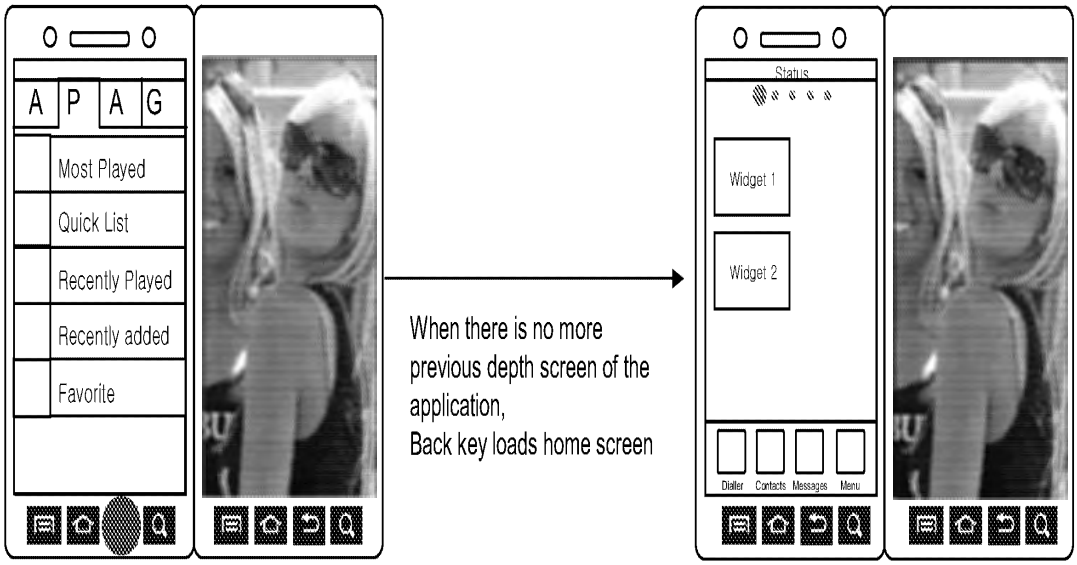
6.3 Back Key Interaction

• Back key interaction on Split-mode (A/B) | Example

- on Split-mode (A/B), Back Key loads previous depth screen of the single-mode application on the selected screen.

Split-mode (A/B)



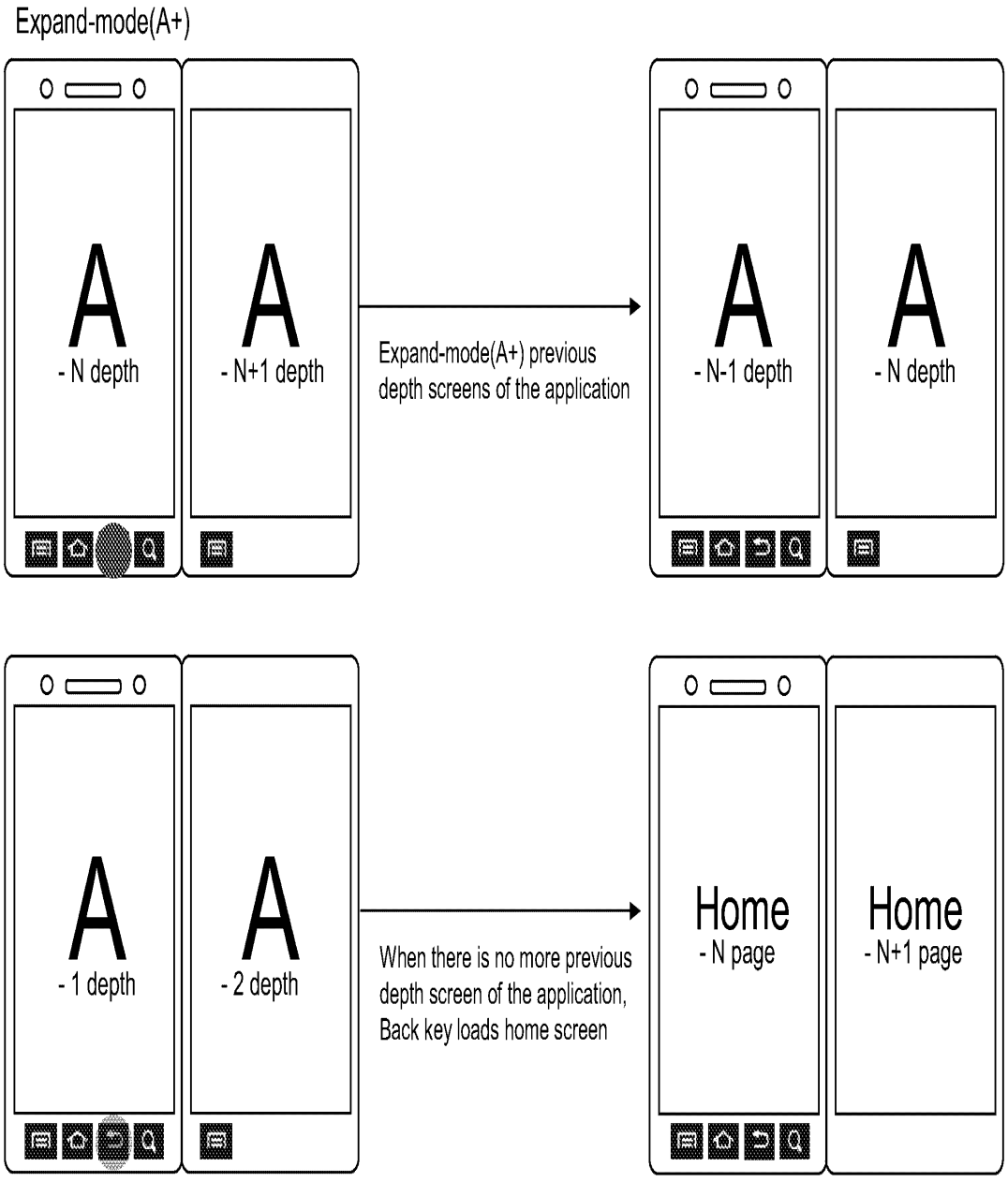


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6. Basic Key Interaction

6.3 Back Key Interaction

• Back key interaction on Expand-mode(A+)
- on Expand-mode(A+), Back Key loads dual-mode last application.



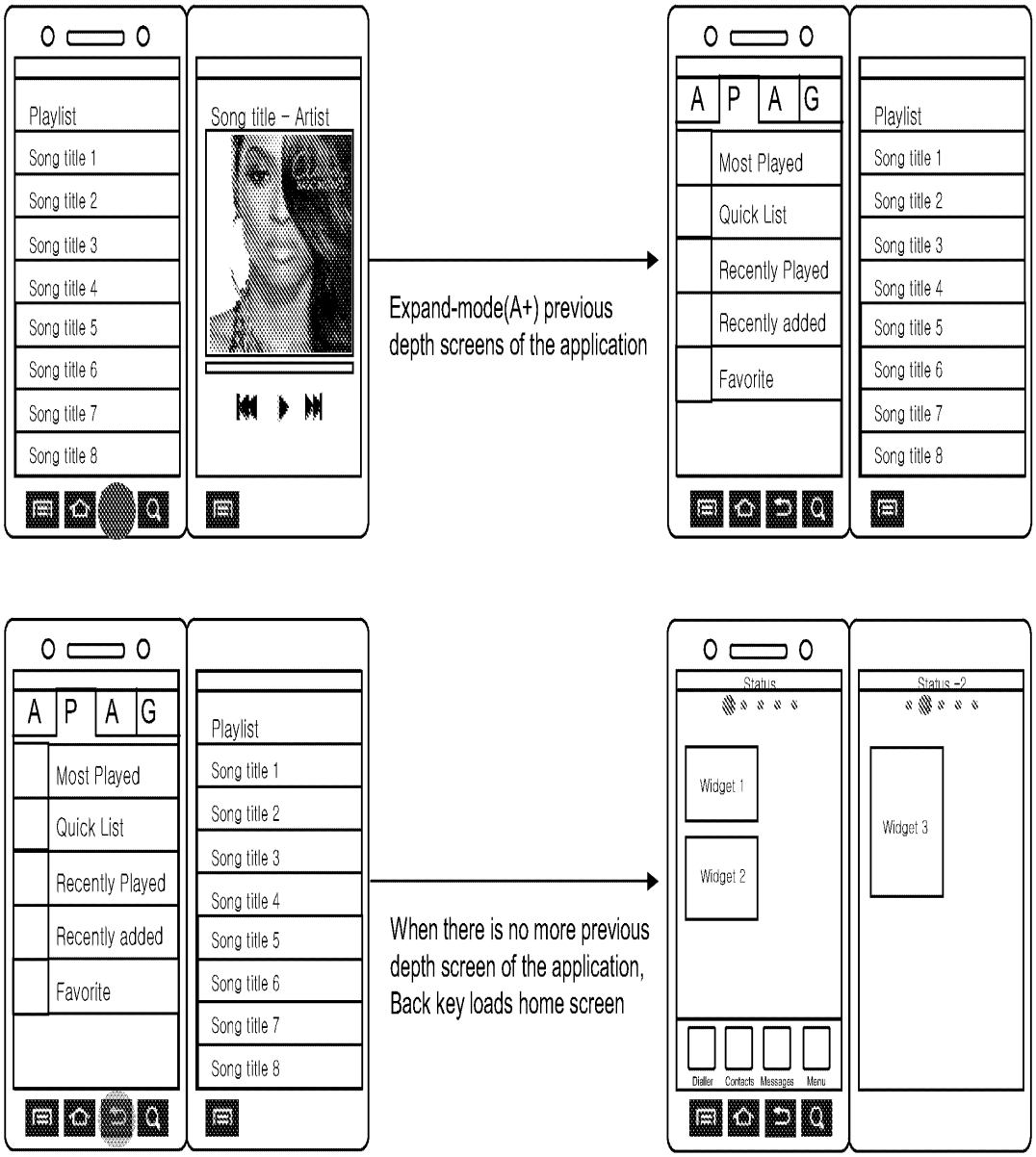
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6. Basic Key Interaction

6.3 Back Key Interaction

• Back key interaction on Expand-mode(A+) | Example
- on Expand-mode(A+), Back Key loads dual-mode last application.

Expand-mode(A+)



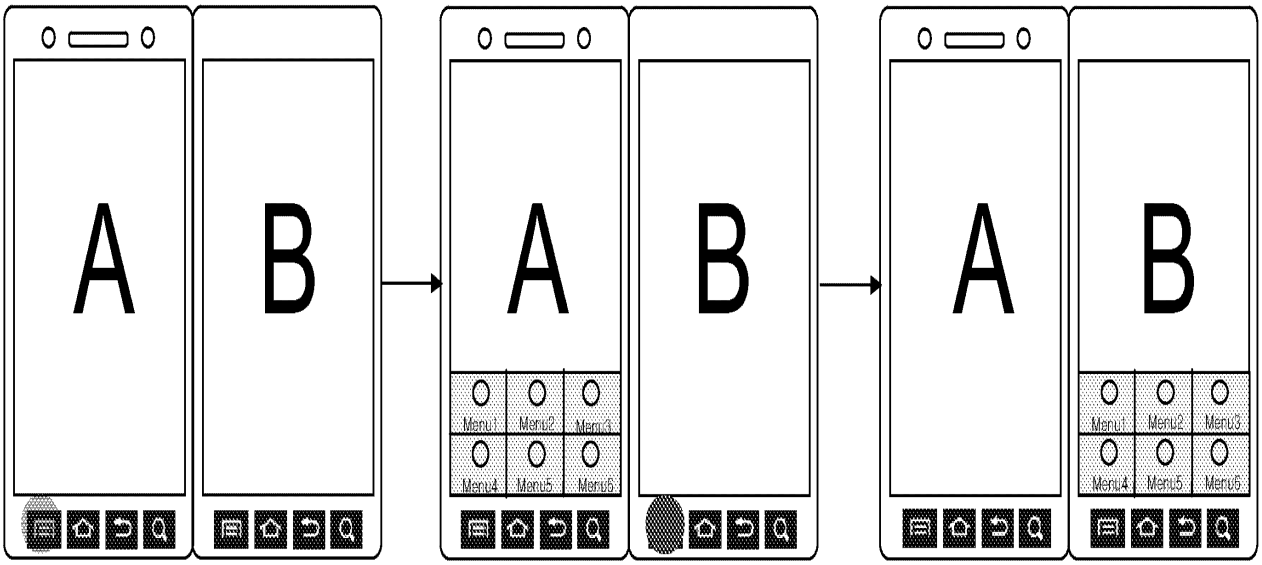
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6. Basic Key Interaction

6.4 Menu Key Interaction

• Menu Key interaction on Split-mode (A/B)

• Split-mode (A/B) : Both of screens have two independent sub menus



Both side of Menu keys are ON

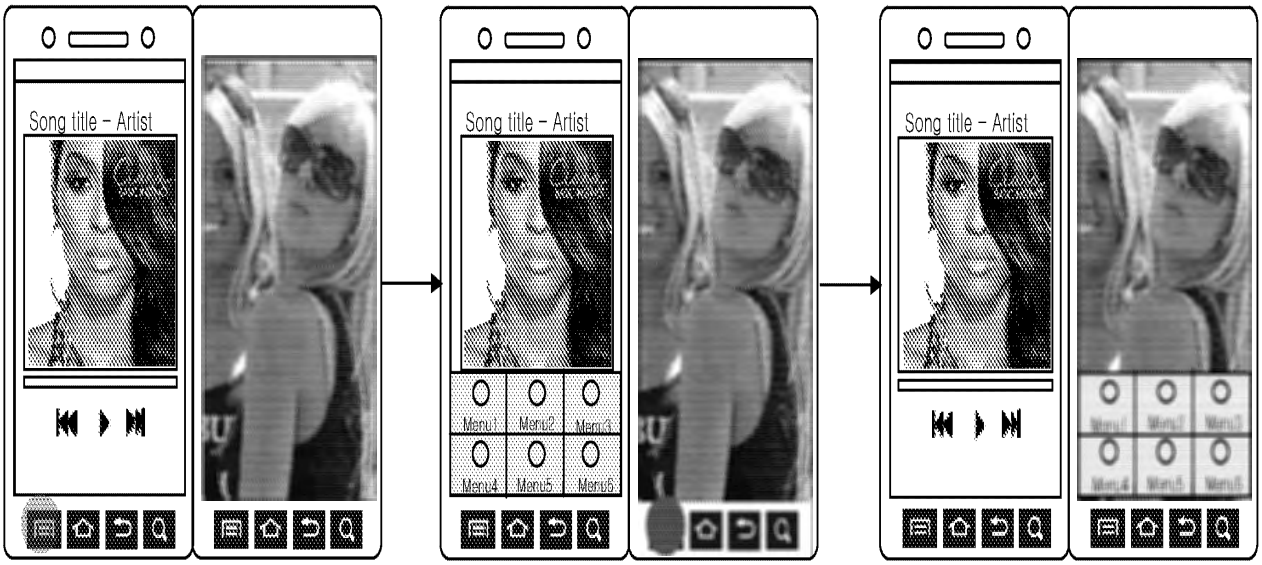
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6. Basic Key Interaction

6.4 Menu Key Interaction

• Menu Key interaction on Split-mode (A/B) | Example

• Split-mode (A/B) : Both of screens have two independent sub menus



Both side of Menu keys are ON

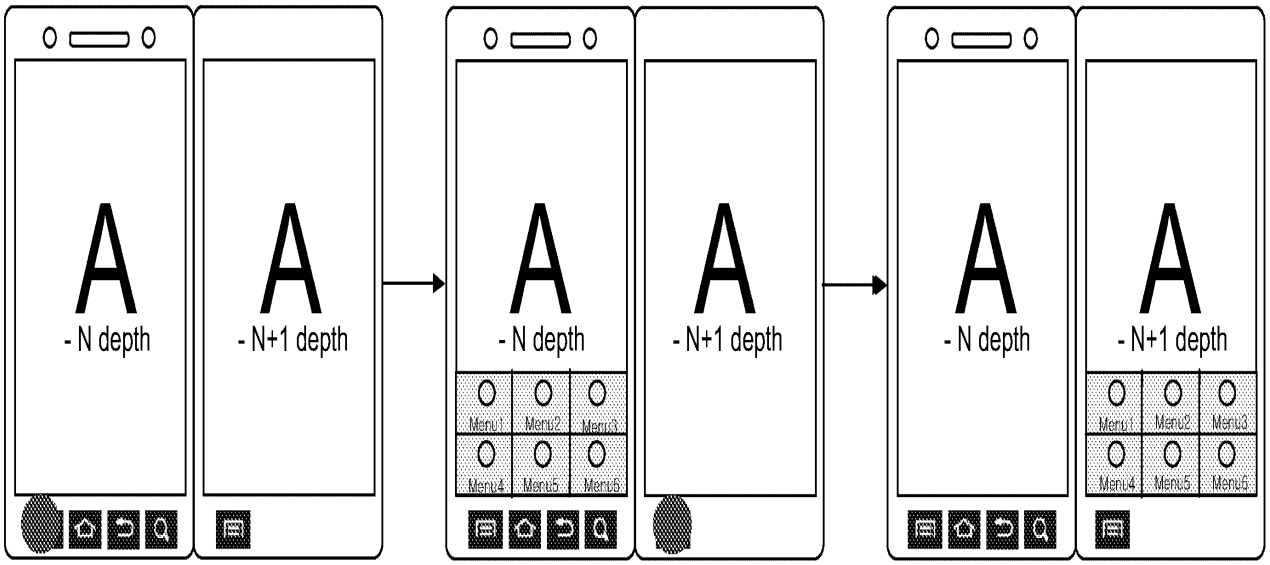
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6. Basic Key Interaction

6.4 Menu Key Interaction

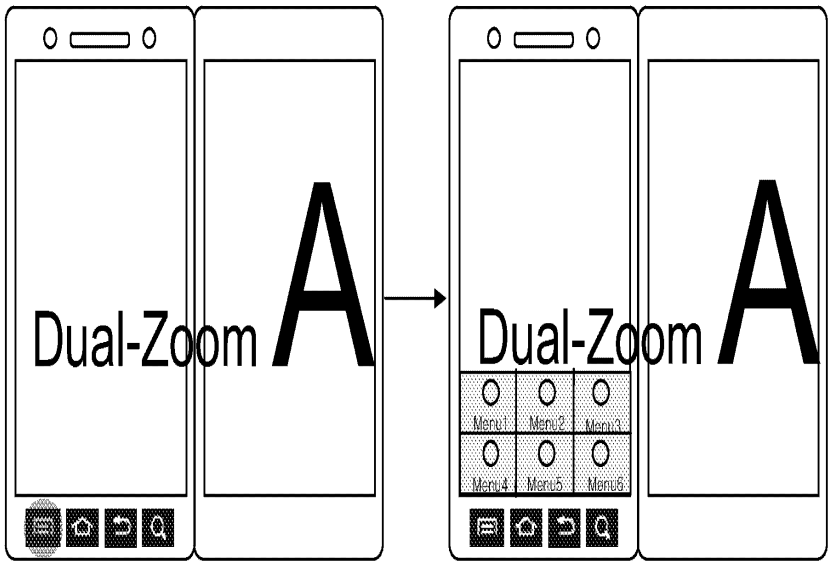
• Menu Key interaction on Expand-mode(A+) and Dual Zoom(A++)

• Expand-mode(A+) : Both of screens have two independent sub menus



Both side of Menu keys are ON

• Dual Zoom(A++) : Both of screens have just one sub menu



Only Left side of Menu key is ON

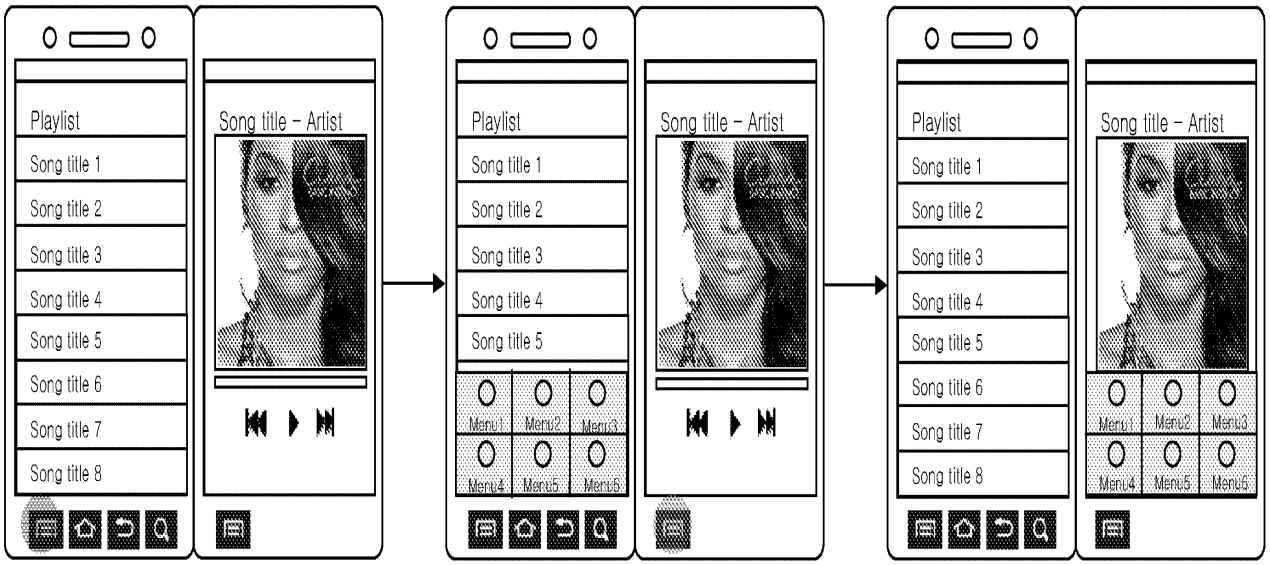
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6. Basic Key Interaction

6.4 Menu Key Interaction

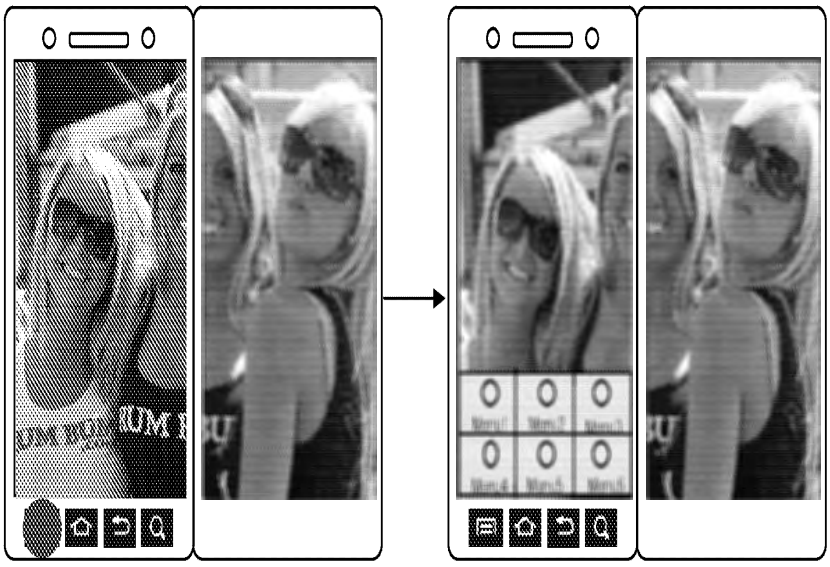
• Menu Key interaction on Expand-mode(A+) and Dual Zoom(A++) | Example

• Expand-mode(A+) : Both of screens have two independent sub menus



Both side of Menu keys are ON

• Dual Zoom(A++) : Both of screens have just one sub menu



Only Left side of Menu key is ON

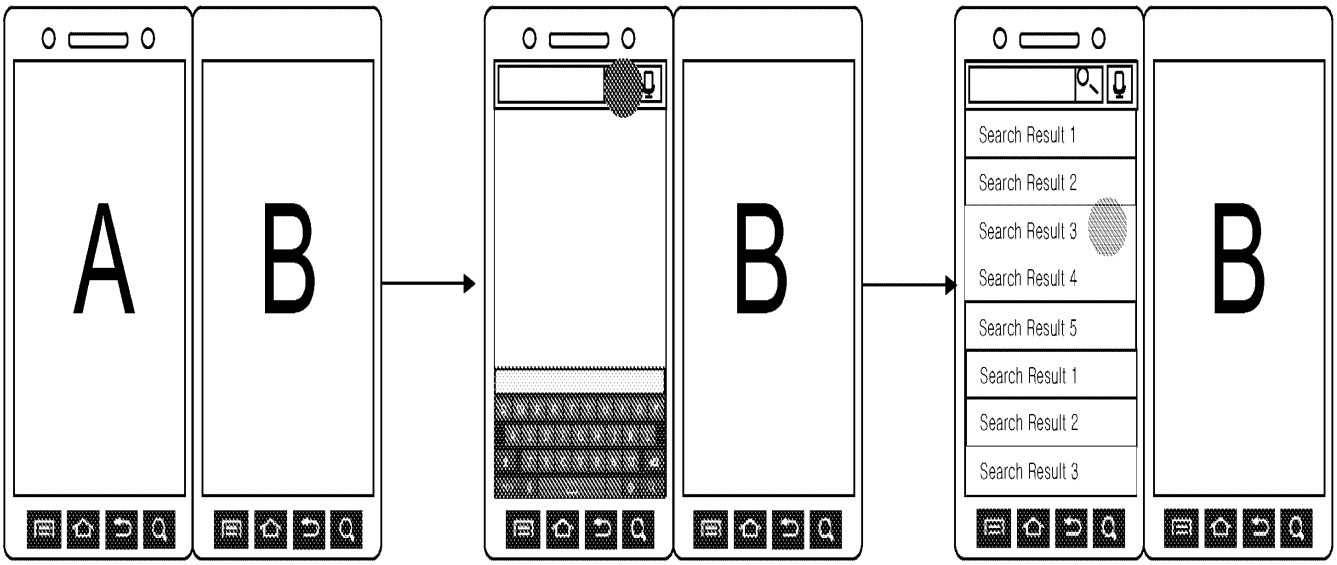
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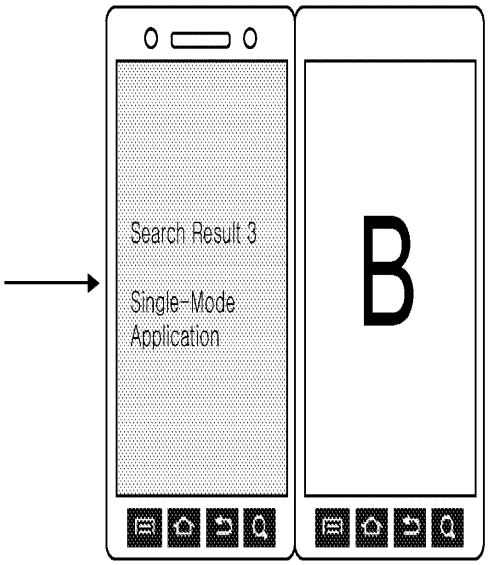
6. Basic Key Interaction

6.5 Search Key Interaction

• Search key interaction on Split-mode (A/B)
- on Split-mode (A/B), Search Key loads single-mode search application on the selected screen.

Split-mode (A/B)





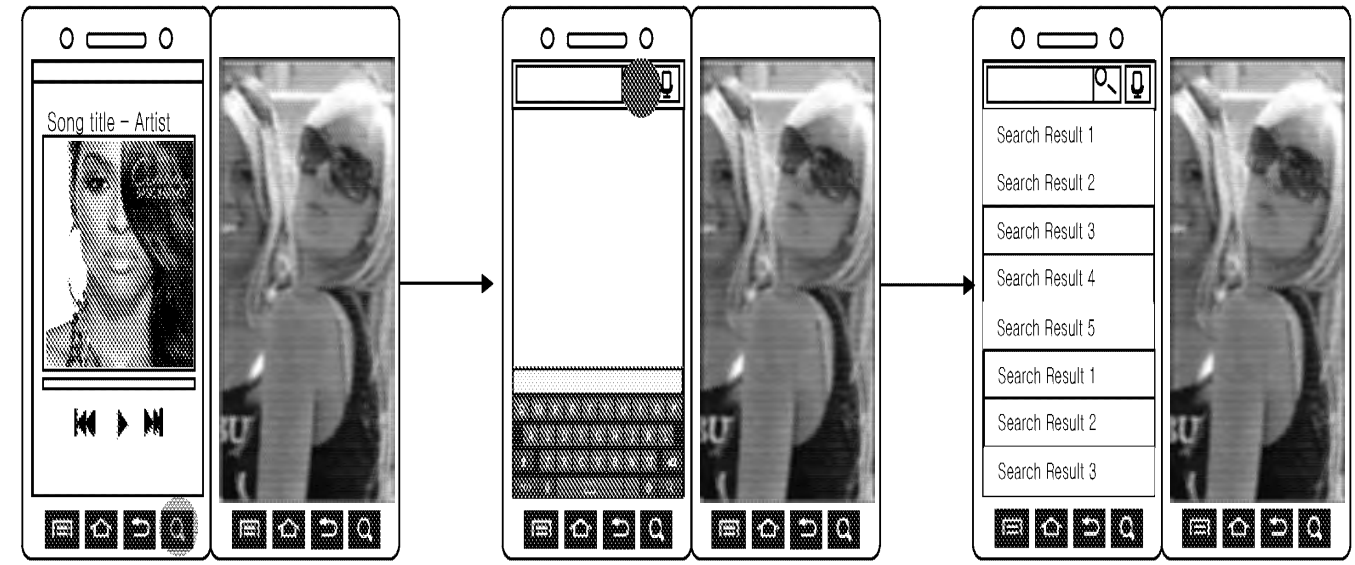
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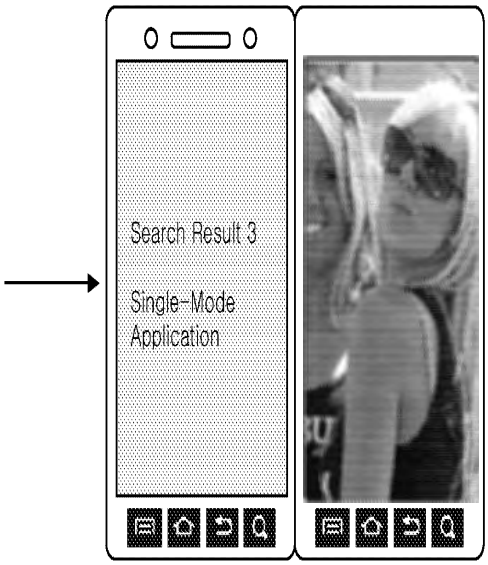
6. Basic Key Interaction

6.5 Search Key Interaction

• Search key interaction on Split-mode (A/B) | Example
- on Split-mode (A/B), Search Key loads single-mode search application on the selected screen.

Split-mode (A/B)



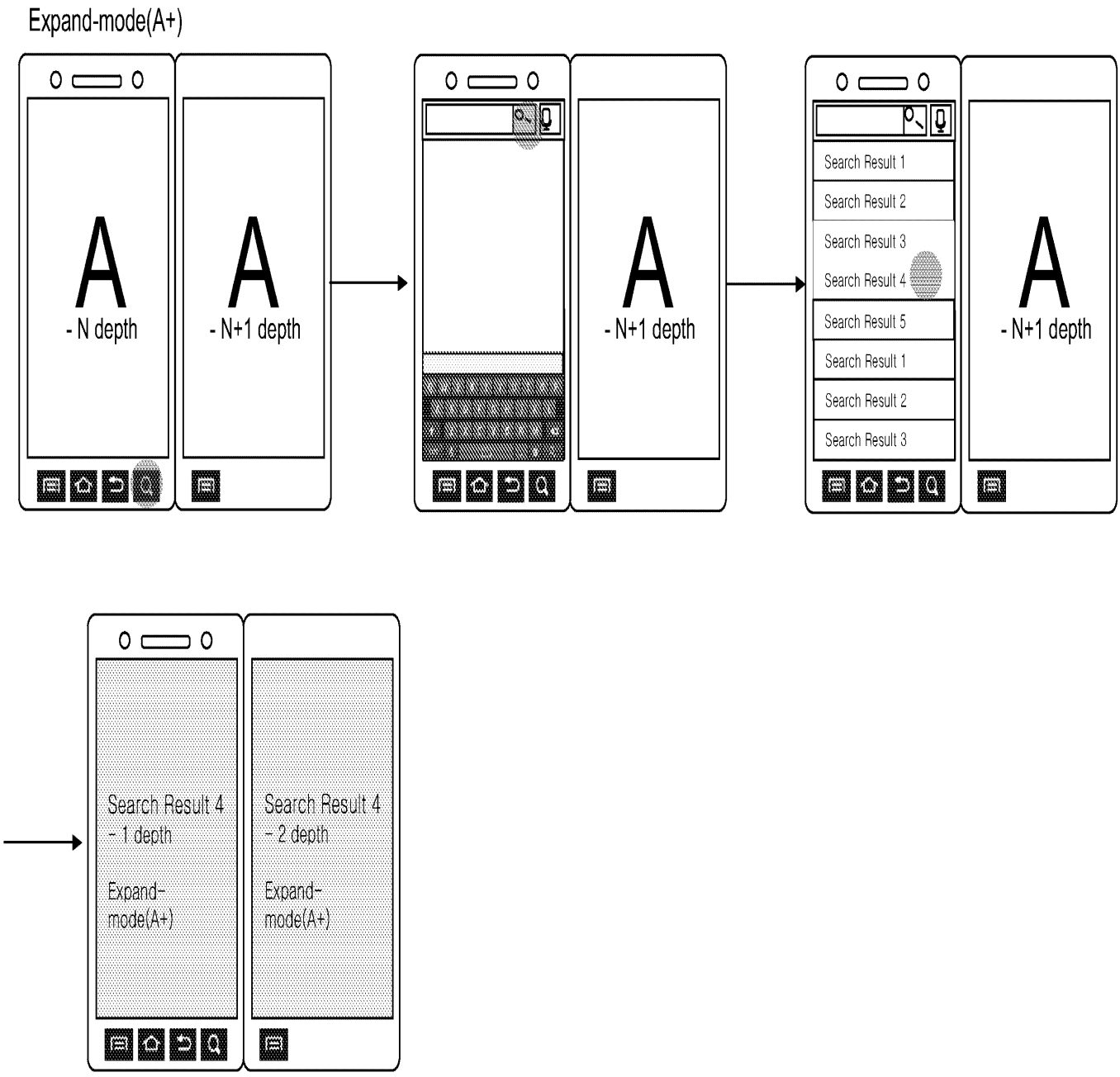


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6. Basic Key Interaction

6.5 Search Key Interaction

• Search key interaction on Expand-mode(A+)

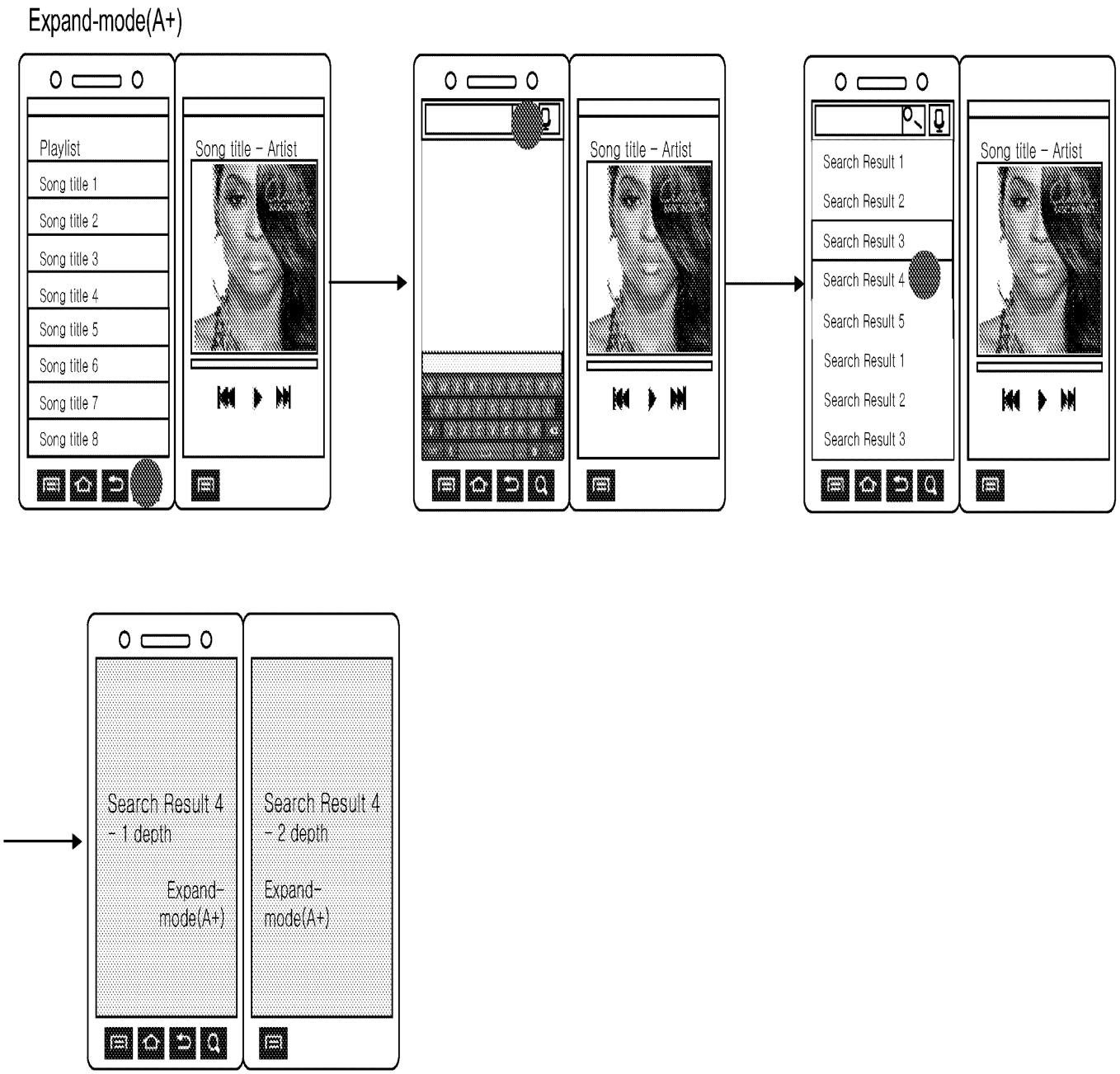


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6. Basic Key Interaction

6.5 Search Key Interaction

• Search key interaction on Expand-mode(A+) | Example

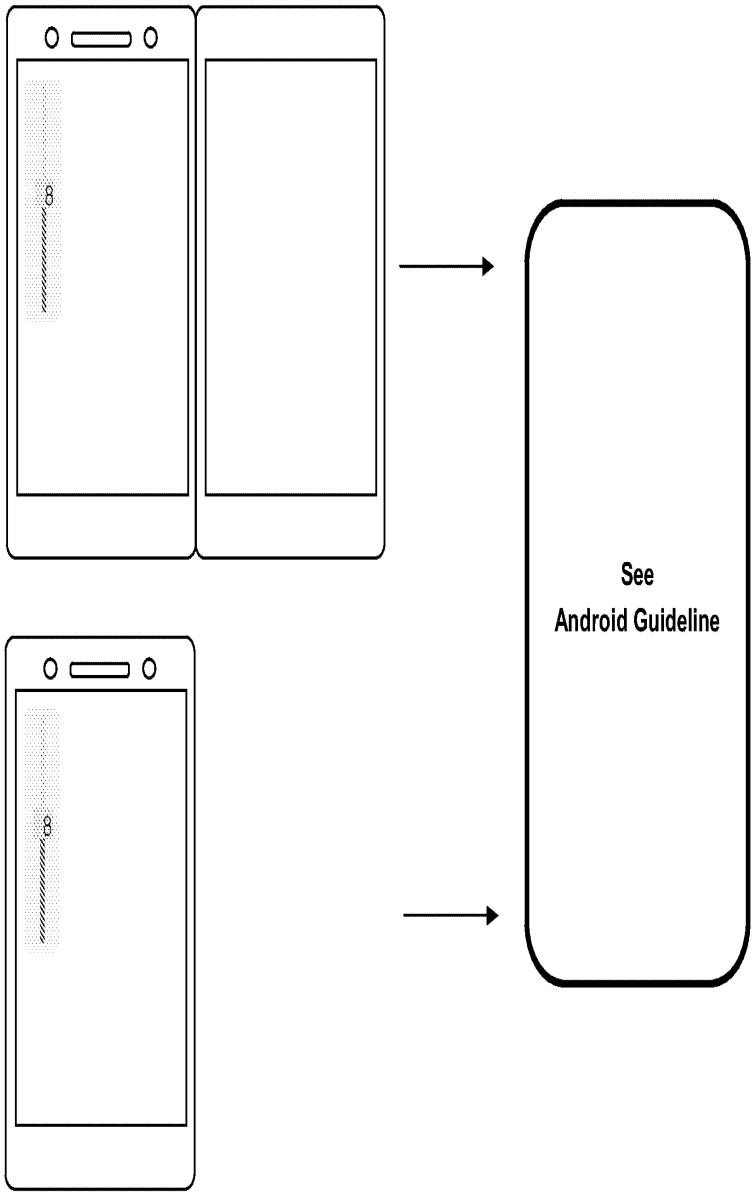


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6. Basic Key Interaction

6.6 Volume Key Interaction

- Volume key interaction on Dual display : Volume control slider appears on the screen which has the volume control button.
- Volume key interaction on Single display : Volume control slider appears on the main screen.



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v.1.6 Updated
Titles and interaction rules of layout modes Updated

Screen Layout

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7. Screen Layout

7.1 Basic Screen Layout

v.1.6 Updated
Screen Layout mode Updated

180º Dual Screen has 2 Screen Mode (Split, Expand)
Each Screen Mode can be exchanged by Quick Panel or Multi Touch Gesture. (See '6. Quick Panel' and '8.Gesture mode change.')

Split-mode(A/B) : 2 Apps

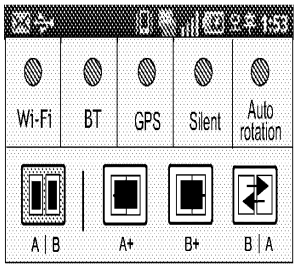
Two screens display another application.
This mode can support all type of App.
(like 3rd party App)
If Split-mode is switched to another mode,
current App and the last App are displayed

Expand-mode(A+) : 1 or 2 depth of 1 App

Two screens display one or two depth of same
App or expanded single contents.
This mode only support the App that Dual-mode
is implemented on.

2 Apps

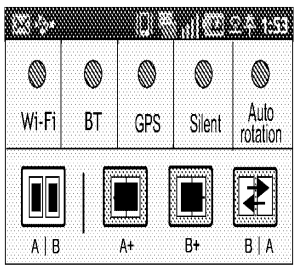




Quick Panel

2 depth of 1 App





Quick Panel

1 depth of 1 App



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7. Screen Layout

7.1 Basic Screen Layout

- Support mode

Category								
Browser	List	O	O	O	O	X	O	
	Web Page	O	O	O	O	O	O	
Samsung Ebook	List	O	O	O	O	X	O	
	Bookshelf	O	O	O	O	O	O	
	Book view	O	O	O	O	O	O	
Messaging	List	O	O	O	O	X	O	
	Message history	O	O	O	O	X	O	
Camera	Live View	O	O			X	X	
	Gallery	O	O			O	O	
Memo	Memo Board	O	O			O	O	
	large Memo	O	O			X	O	
Video Player	List	O	O			X	O	
	Play View	O	O			O	X	
Contacts	List	O	O			X	O	
	Detail	O	O	O	O	X	O	
Calendar	Month View	O	O	O	O	△	△	
	Weeks view	O	O	O	O	△	△	
	Day	O	O	O	O	△	△	
Phone	List	O	O	O	O	X	O	
	Dial	O	O	O	O	X	X	
	Detail	O	O	O	O	X	O	
Gallery	Thumbnail Group	O	O	O	O	O	O	
	Thumbnail	O	O	O	O	O	O	
	Single Image	O	O	O	O	O	O	
Maps	Map View	O	O	O	O	O	O	
	List	O	O	O	O	X	O	

TBD

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7. Screen Layout

7.1 Basic Screen Layout

- Expand Mode details

Application	Application Type	View Mode (Portrait / Landscape / Portrait ↔ Landscape)	Launch app in 1st from screen A or B		S/W Feedback	UX Feedback
			Screen A	Screen B		
Home Screen		0 / 0 / 0	Home Screen Page N	Home Screen Page N+1		
Applications Screen		0 / 0 / 0	Application Screen Page N	Application Screen Page N+1		
Browser	Samsung Application	0 / 0 / 0	Web Page A	List with 3 Tap (Bookmarks, Mostvisited, History)		
			Web Page A	Multi-Windows		
Ebook	Samsung Application	0 / 0 / 0				
Messaging	Samsung Application	0 / 0 / 0	Conversations List View	Conversations Detail View		
			Empty Case	Previous displayed app		
Camera	Samsung Application	0 / 0 / 0	TBD	TBD		
Memo	Samsung Application	0 / 0 / 0		Detail View		
				Maintain previous app		
Video Player	Samsung Application	0 / 0 / 0		Empty Video Player		
				Maintain previous app		
Contacts	Samsung Application	0 / 0 / 0		Details View on 1st cotact		
			Tap - Groups			
			Tap - History			
			Tap - Activites			
			No Contact	Maintain previous app		
Phone	Samsung Application	0 / 0 / 0	Tap - Keypad	Maintain previous app		
			Tap - Logs	Maintain previous app		
			Tap - Favorites	Maintain previous app		
Calendar	Samsung Application	0 / 0 / 0	Month View	Detail View		
			Week View	Detail View		
			Day View	Detail View		
			List View	Detail View		
			No event	Maintain previous app		
Gallery	Google Application	0 / 0 / 0	Group View	Thumbnail View		
			Thumbnail View	Detail View		
			Detail View N	Detail View N+1		
			No file	Maintain previous app		
Maps	Google Application	0 / 0 / 0				

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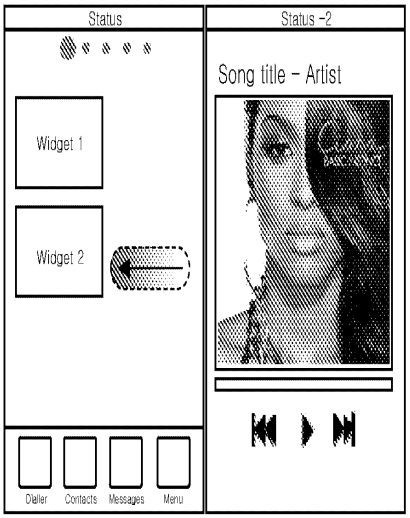
7. Screen Layout

7.1 Basic Screen Layout

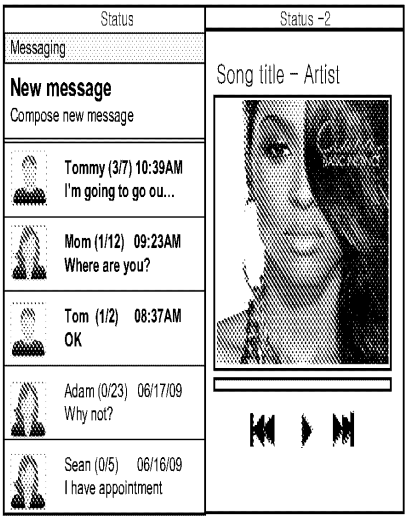
v.1.6 Updated
Screen Layout mode Updated

• Split-mode(A/B) : 2 applications
See the android basic interaction rules for single display phones.

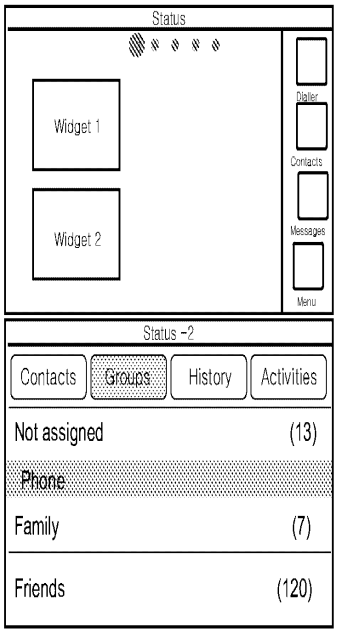
Home – Application



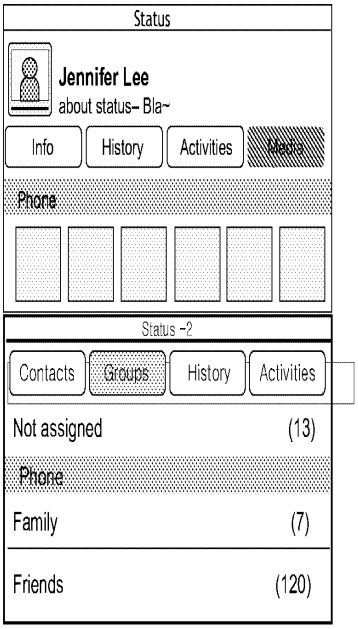
Application– Application



Home – Application



Application– Application



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7. Screen Layout

7.1 Basic Screen Layout

v.1.6 Updated
Screen Layout mode Updated

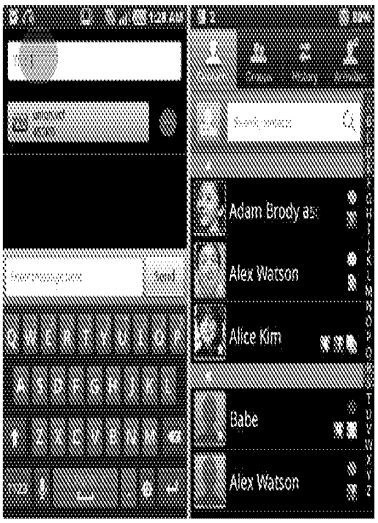
• Expand-mode(A+) : 2 depth of one application

There are 5 dual mode usages and the usages are depend on the application characteristics. Two depth of same App. are usually displayed on expand mode.

First Depth – Second Depth



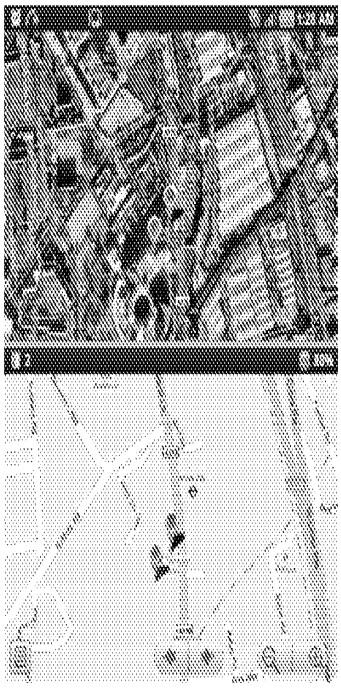
Input –Selection



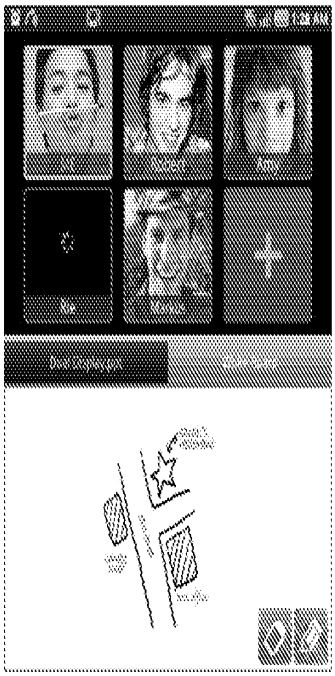
Page n – Page m



Dual View



Split Function



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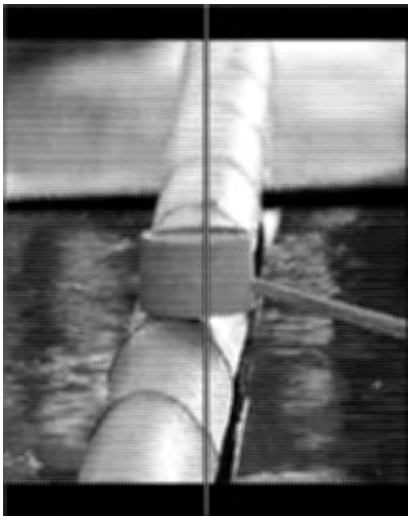
7. Screen Layout

7.1 Basic Screen Layout

v.1.6 Updated
Screen Layout mode Updated

• Expand-mode(A+) : 1 depth of one application
Two screen display single depth of one App or expanded single contents.

Zoom content



More contents



More pages



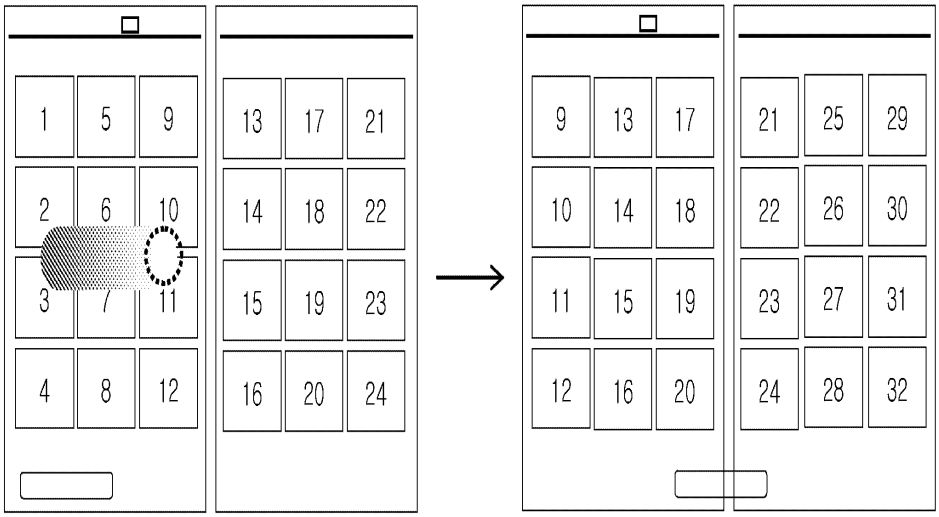
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7. Screen Layout

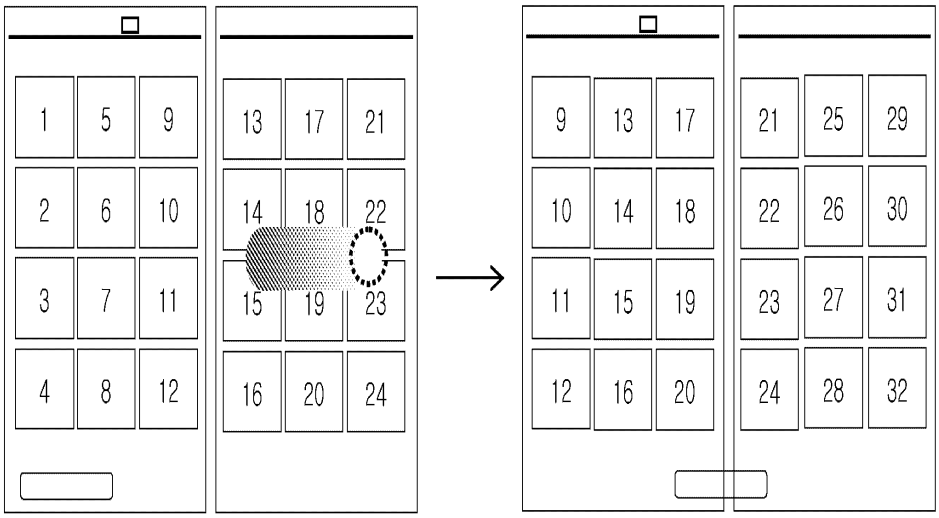
7.2 Screen Navigation (Gallery)

• When List or Grid is displayed over two screens, all items of the List or the Grid are scrolled together.
- When flick or sweep on one screen, all items of the List or the Grid are scrolled together as fast as the speed of touch gesture.
(it follows the rule of flick and sweep interaction on the single screen.)

Flick or sweep Interaction on one screen



all items of the List or the Grid are scrolled together as fast as the speed of touch gesture.



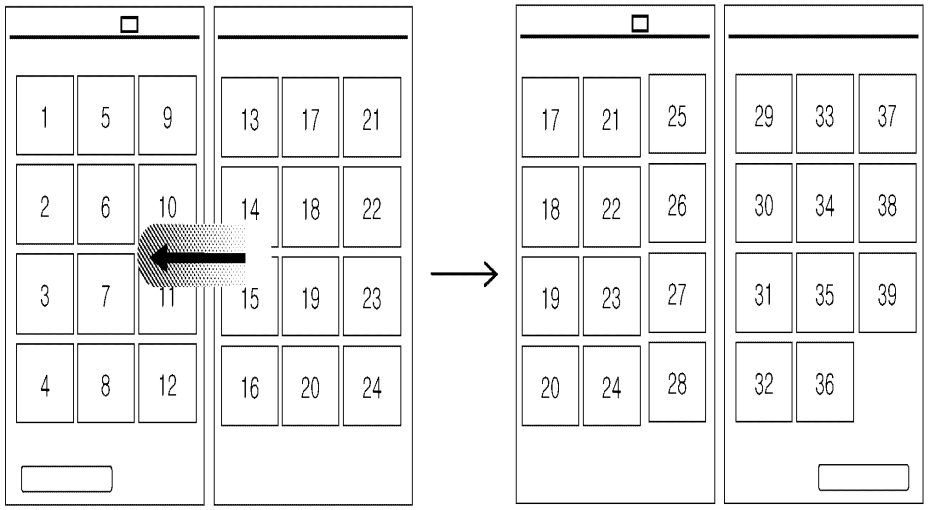
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7. Screen Layout

7.2 Screen Navigation (Gallery)

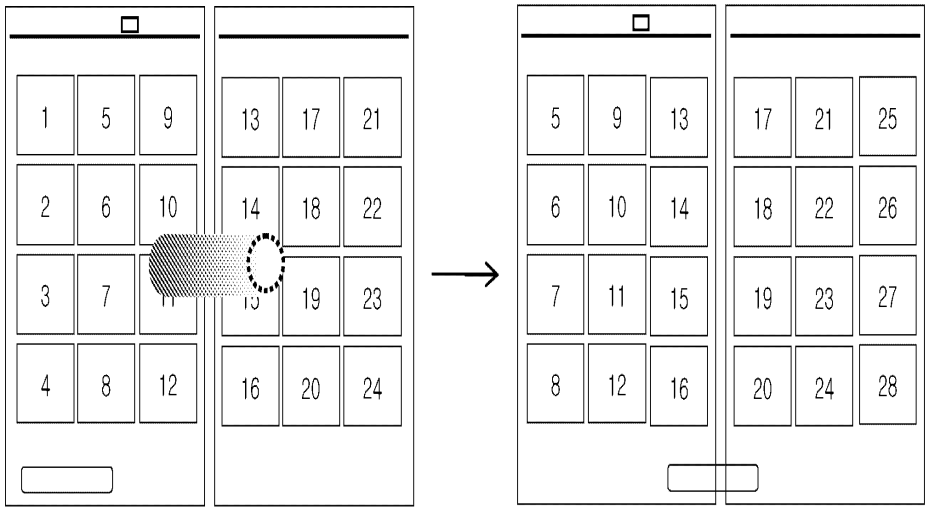
• When List or Grid is displayed over two screens, all items of the List or the Grid are scrolled together.
- When flick over the hinge (over two screens), all items of the List or the Grid are scrolled to the last page at fast speed.
- When sweep over the hinge (over two screens), all items of the List or the Grid are scrolled together as fast as the speed of touch gesture. (it follows the rule of flick and sweep interaction on the single screen.)

Power Scroll : Flick Interaction over the hinge



Power scrolled to the last page.

Sweep over the hinge



all items of the List or the Grid are scrolled together as fast as the speed of touch gesture.

< Flick and Sweep Interaction over the hinge>

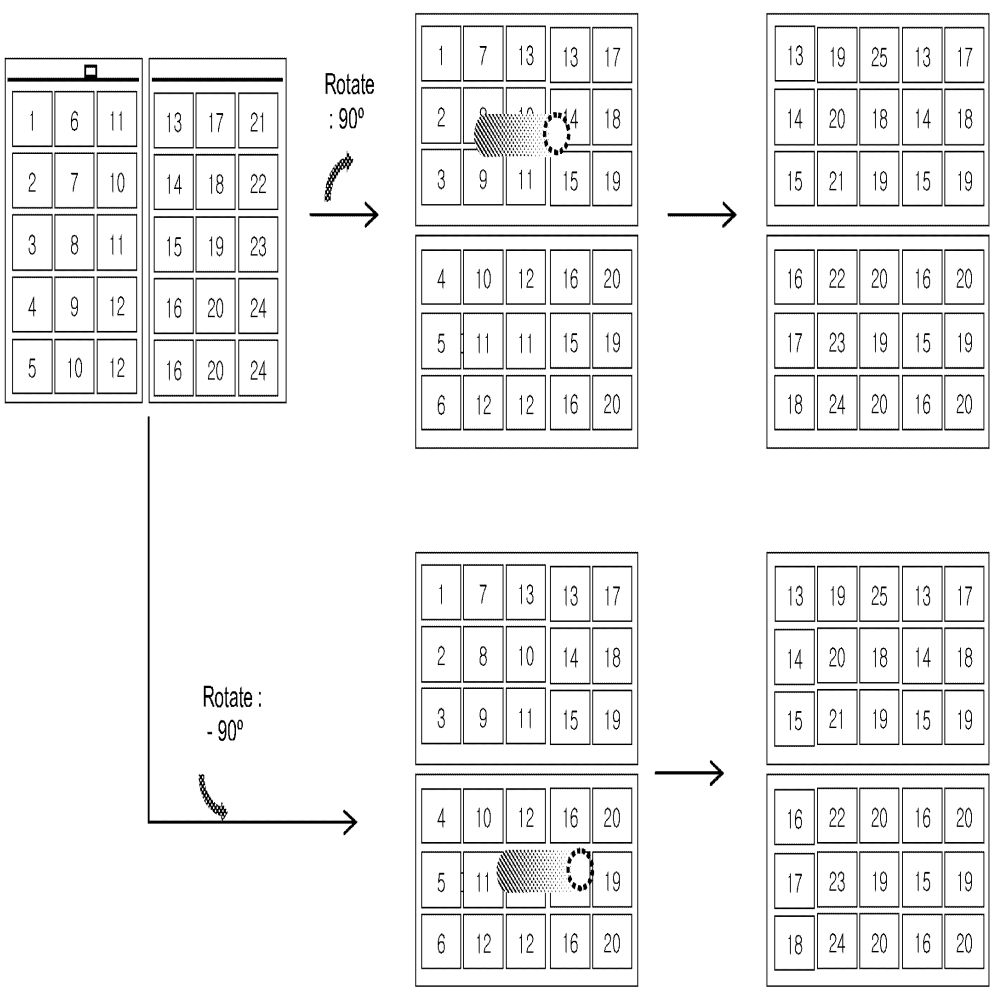
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7. Screen Layout

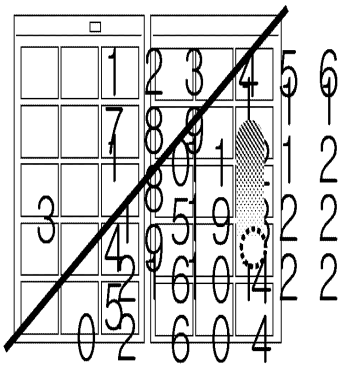
7.2 Screen Navigation

• Grid Type

- When Grid is displayed over two screens, it is scrolled with horizontal direction.
- Each Item on the Grid is not displayed over two screens.
- When it is rotated with 90º, Items on the Grid are rotated and scrolled with horizontal direction.
- Horizontal Layout : Items on the Grid are scrolled with horizontal direction on both of the upper screen and the lower screen.
- Vertical Layout : Items on the Grid are not scrolled with vertical direction.
  (If needed, Items on the Grid are scrolled with vertical direction in the horizontal layout)



< Grid Rotation >



Vertical Layout :
Items on the Grid are not scrolled with vertical direction.

< Grid : Unavailable Case >

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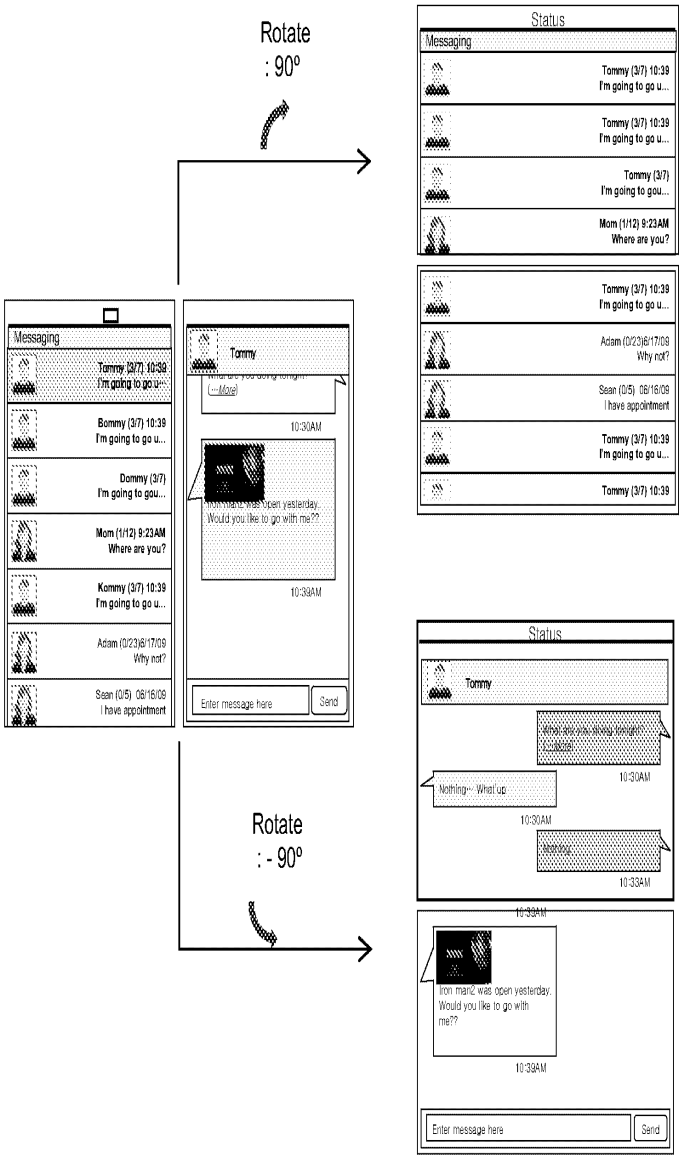
7. Screen Layout

7.2 Screen Navigation

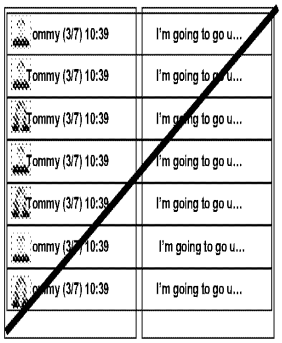
v.1.5 Updated
Message App Rotation Rule Updated

v.1.6 Updated
Message App Rotation Rule Updated

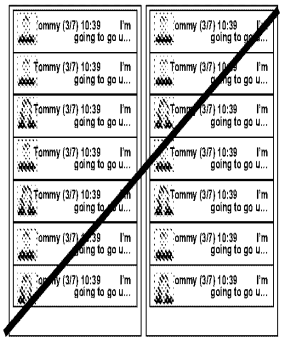
- List Type
- Vertical Layout : List is displayed on just one screen, and not displayed over two screens.
- Horizontal Layout : List could be displayed over two screens.
- Items in the list could not be expanded over two screens.



< Horizontal List Expand >



Vertical Layout :
Items in the list could not be expanded over two screens.



Vertical Layout :
List is displayed on just one screen, and not displayed over two screens.

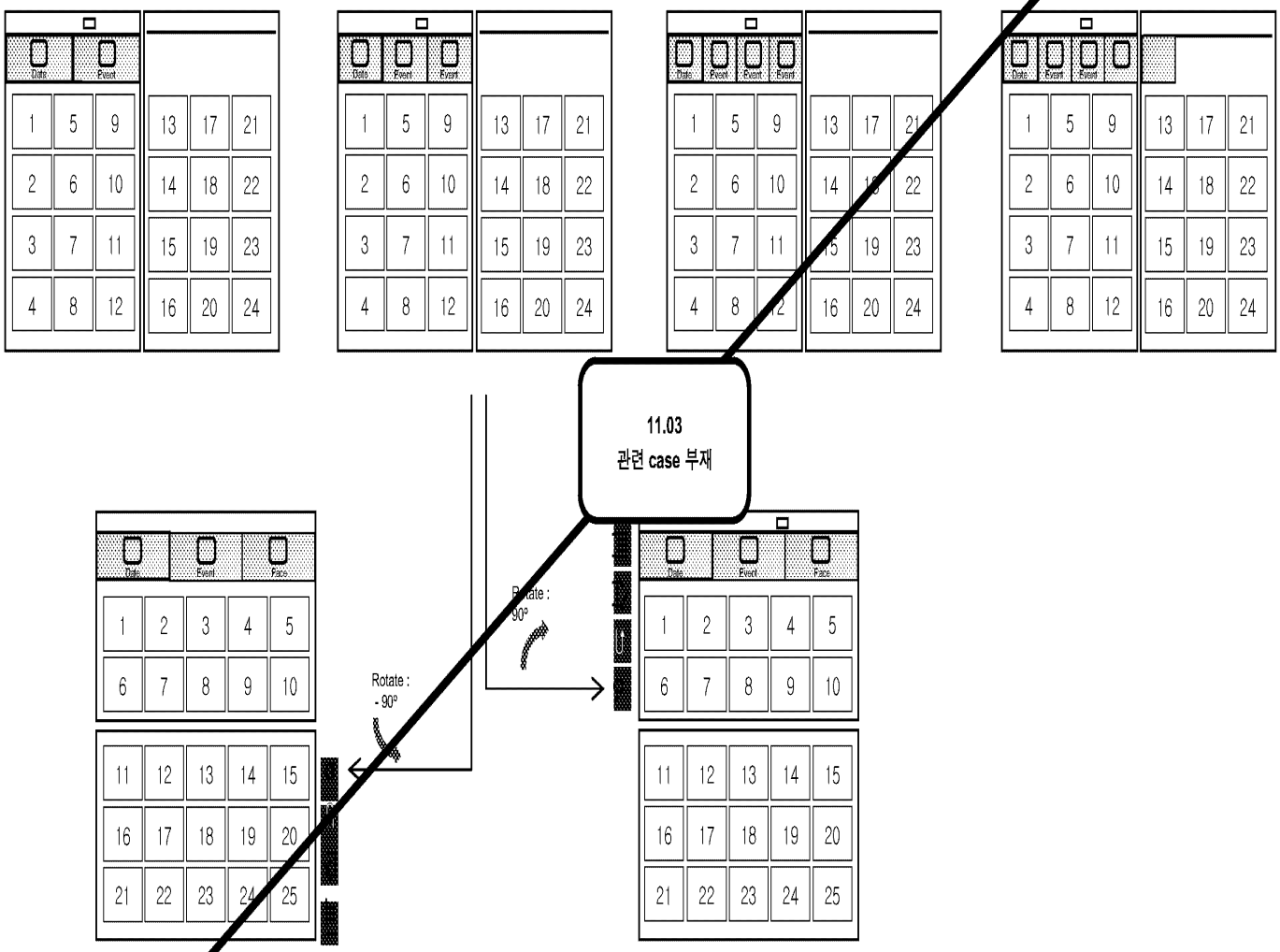
< List : Unavailable Cases>

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7. Screen Layout

7.2 Screen Navigation

1. Tab.은 한 스크린에 제시할 수 있는 최대 Tab의 개수까지는 한 스크린에 표시한다.
2. 최대 Tab.의 개수를 초과하면 오른쪽 스크린에 Tab.을 배치한다.
3. Tab.이 표시되어 있는 스크린의 반대쪽 스크린도, 같은 Tab.에 속해있음을 시각적으로 보여준다.



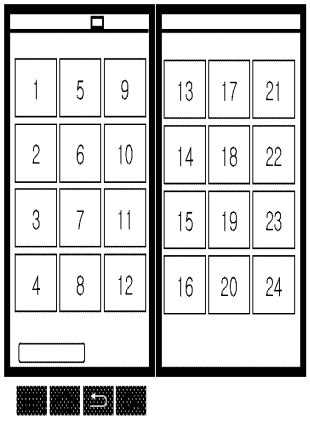
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7. Screen Layout

7.3 Pop-up & Contextual Pop-up

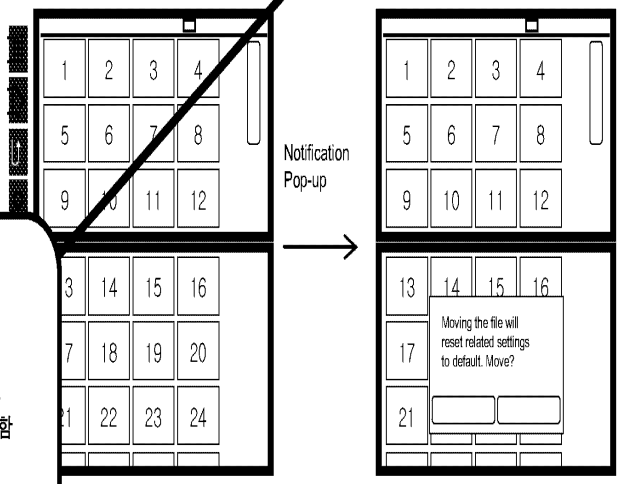
1. Pop-up 표시 시에는 두 화면이 Dim 처리하고 왼쪽/하단 화면에 Pop-up을 표시한다.
2. 영화와 같은 Play 중인 화면에 대해서는 Dim 처리하지 않고 해당 화면에 Pop-up을 표시하지 않는다.

- 세로



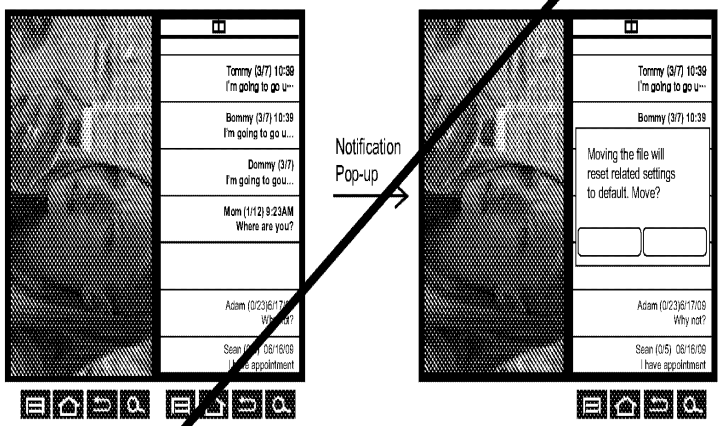
왼쪽화면에 pop-up 표시

- 가로



하단 화면에 pop-up 표시

11.03
Notification Pop-up은 티커로 표시되므로 기존 Single과 동일함



영화와 같은 Play 화면은 Play 화면에 Pop-up을 표시하지 않는다.

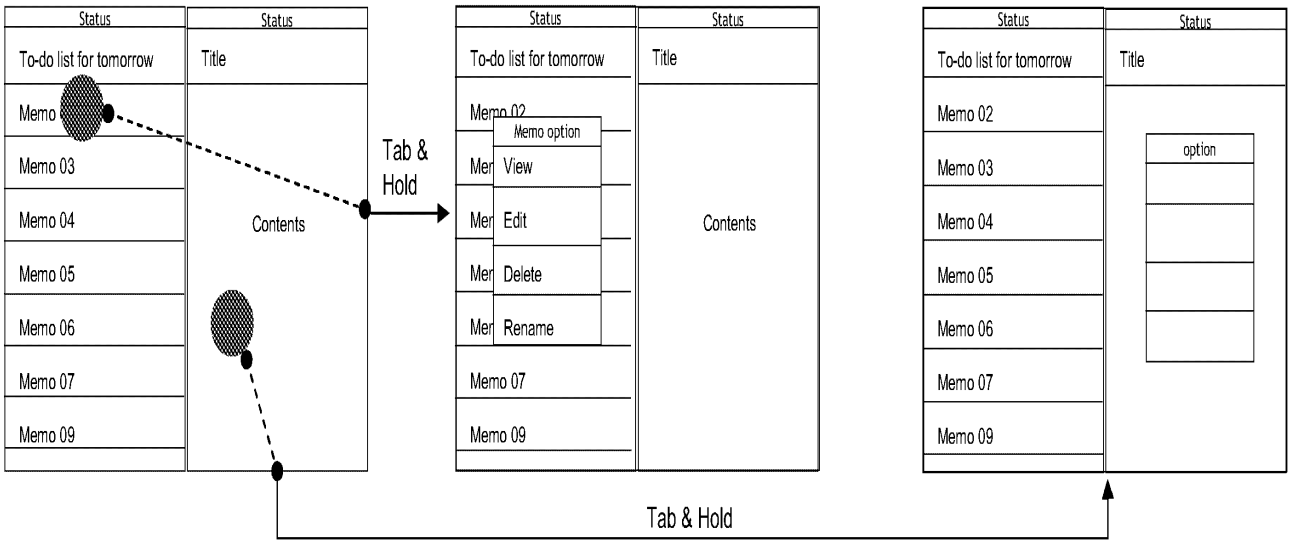
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7. Screen Layout

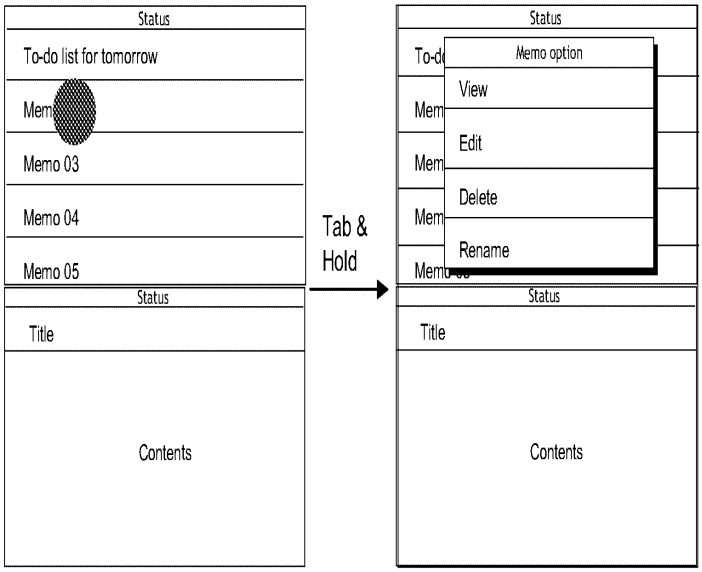
7.3 Pop-up & Contextual Pop-up

• Contextual Pop-up is opened in the center of the screen user tapped
- Contextual Pop-up is not displayed over two screens.

Vertical



Horizontal



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v.1.6 Updated
Dual Layout Change Buttons are Redesigned

Quick Panel

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8. Quick Panel

8.1 Status bar

v.1.5 Updated
Sub Status Bar Should be Changed

v.1.6 Updated
Screen Layout mode Updated

- Default Status Bar
  - Default working and the rule of icon are same as existing Android status bar.
  - Dual mode icon will be added to the right-align icons of status bar.
- Sub Status Bar
  -It is optional status bar that used only at the Dual Screen status.
  -It shows information about Task Status.

Default Status Bar



Dual Display mode icon

TBD

Sub Status Bar



Number of tasks currently in use

Memory usage

Dual Display Layout Icon

Status	Dual Display Layout icon
Portrait (Dual)	A|B A+
Landscape (Dual)	A|B A+

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8. Quick Panel

8.2 Layout

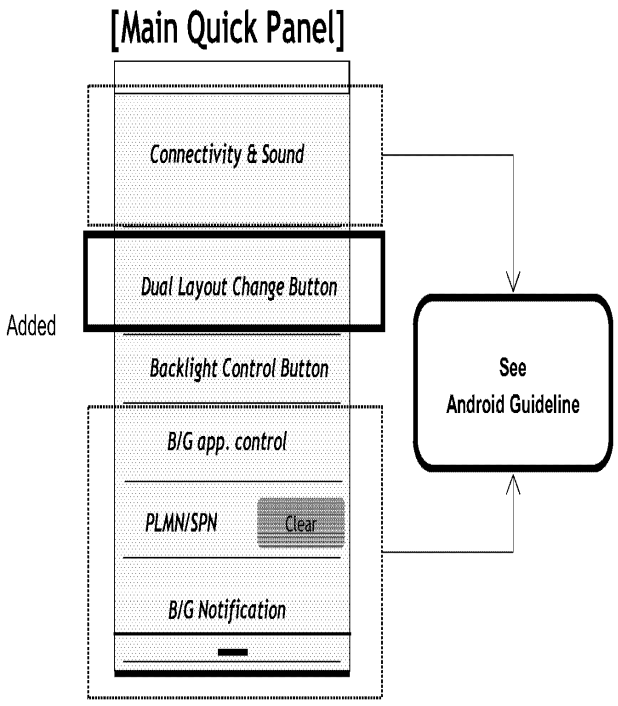
v.1.6 Updated
Dual Layout Change Buttons are Redesigned

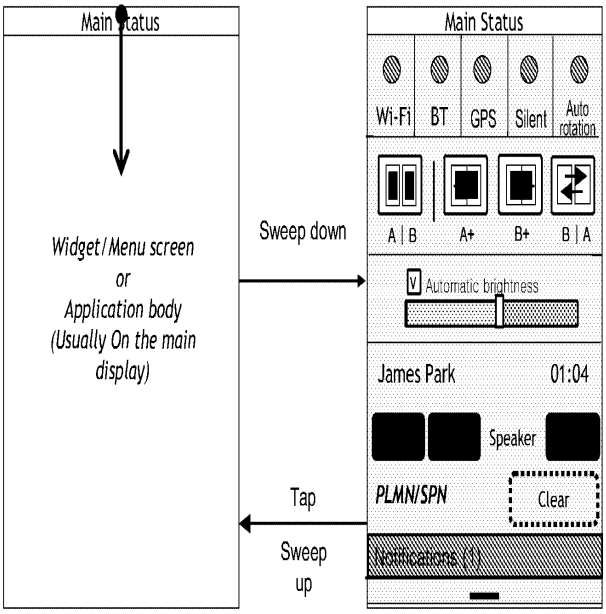
• Default Quick Panel

-It provides Quick Panel of Android Phone default functions. (Connectivity & Sound)

-It provides 'Dual Screen Layout Change' under the 'Connectivity and Sound' line.







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8. Quick Panel

8.2 Layout

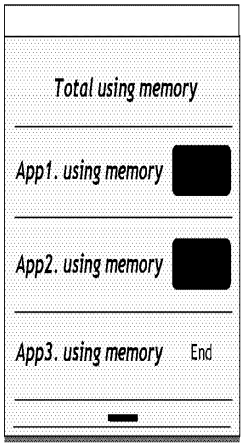
v.1.5 Updated
Sub Quick Panel Should be Changed

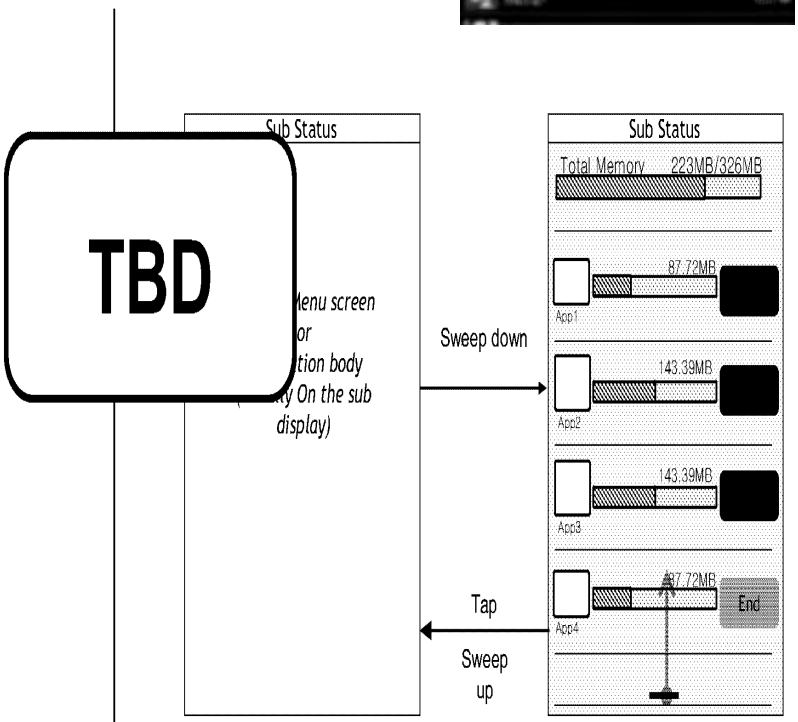
• Sub Quick Panel

-It is only used optional status bar.
-It shows using application memory and the list of running task.
-It provides the simple off button for running task.



[Sub Quick Panel]





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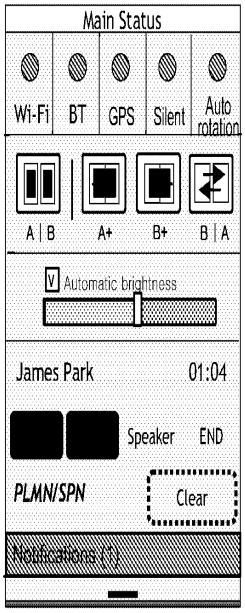
8. Quick Panel

8.3 Definition of Main Quick Panel

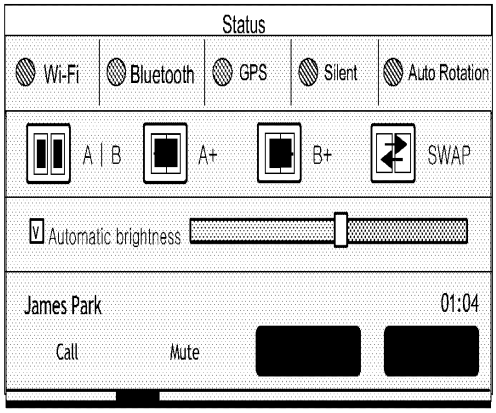
v.1.6 Updated
Dual Layout Change Buttons are Redesigned

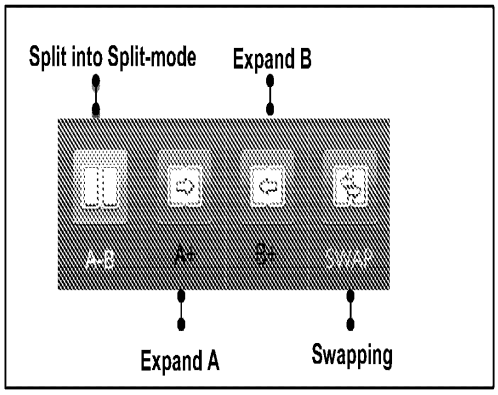
- Layout Change Button (180 degrees)
  - -It provides the button which can change 4 Layout modes. (A|B, A+, B+, SWAP)
  - -It distinguish between support and not.

[Portrait mode]



[Landscape mode]





	Status	Description
	Support	Running application supports this mode so that user can select it.
	Not support	Running application doesn't support this mode so that user can not select it.

A+

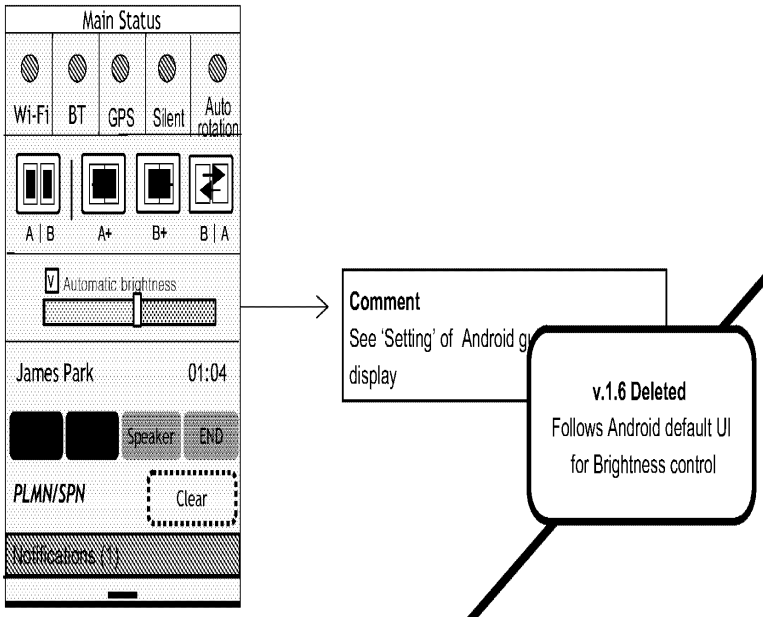
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8. Quick Panel

8.3 Definition of Main Quick Panel

• Brightness Control Button

- Working is same as the existing Brightness controller of Android UI.
- If user adjust brightness, it applies to both screen.

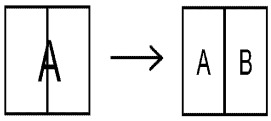
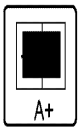
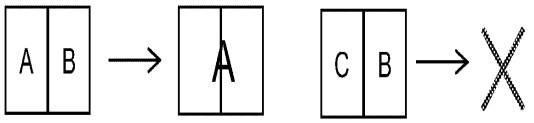
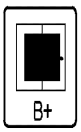
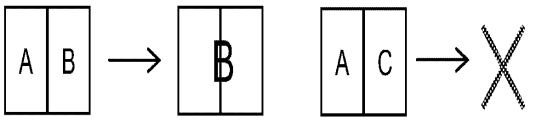
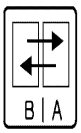
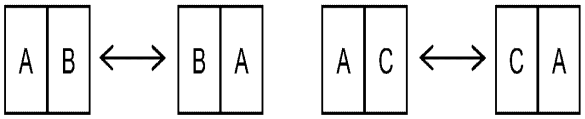


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8. Quick Panel

8.4 Mode Change

v.1.6 Updated
Dual Layout Change Buttons are Redesigned

Type		Description	Use cases
Split-mode(A/B)		Select this button, Expand-mode(A+) can be changed to Split-mode(A/B) Horizontal Mode has same rule	
Expand A		Select this button, user can expand the application on the left screen over two screens. Horizontal Mode has same rule If the left App can't support Expand-mode, this button is disable.	
Expand B		Select this button, user can expand the application on the right screen over two screens. Horizontal Mode has same rule If the right App can't support Expand-mode, this button is disable.	
Swapping		Select this button, screens are exchanged. This button is disable except Split-mode. Horizontal Mode has same rule	

A : Application Support Expand-Mode
B : Application Support Expand-Mode
C : Application only support Split-Mode

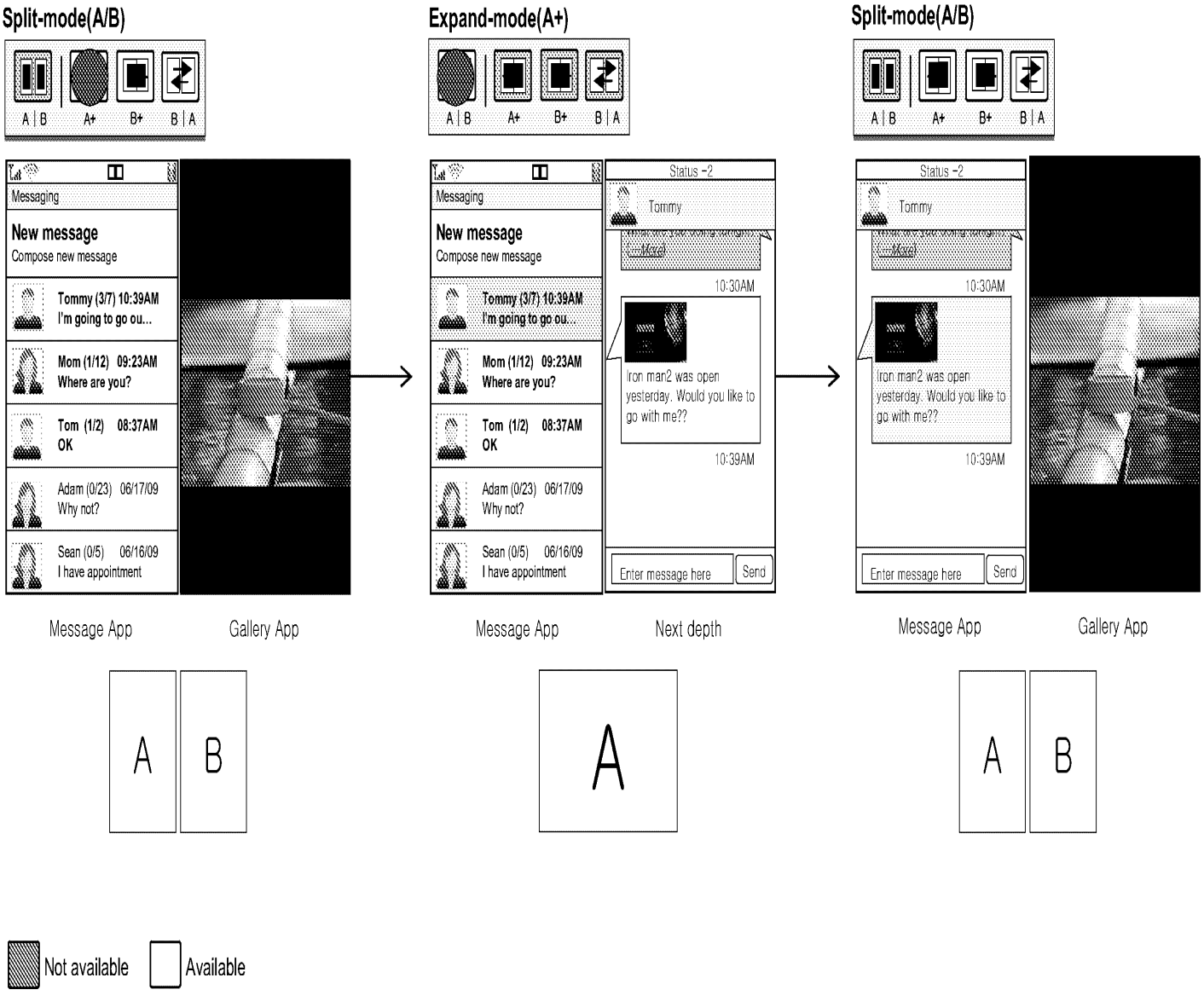
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8. Quick Panel

8.4 Mode Change

v.1.6 Updated
Dual Layout Change Buttons are Redesigned

- Split-mode(A/B) ← → Expand-mode(A+)
  - User can change mode using view mode button of quick panel.
  - View mode is dependent on current view mode and displayed App.



Not available Available

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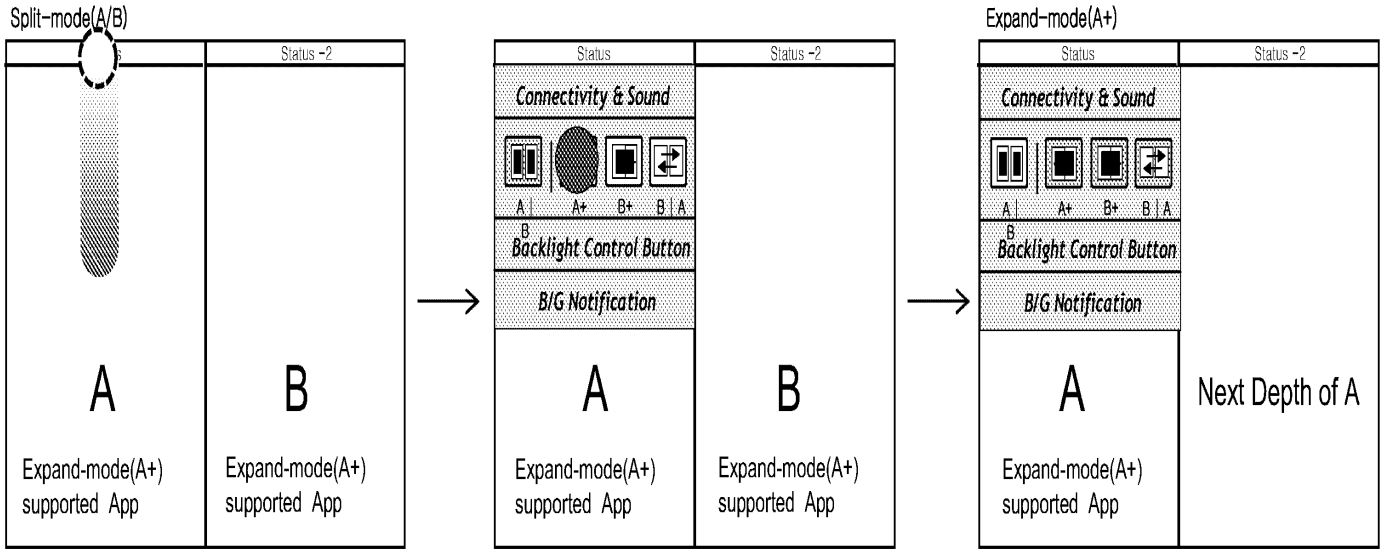
8. Quick Panel

8.4 Mode Change

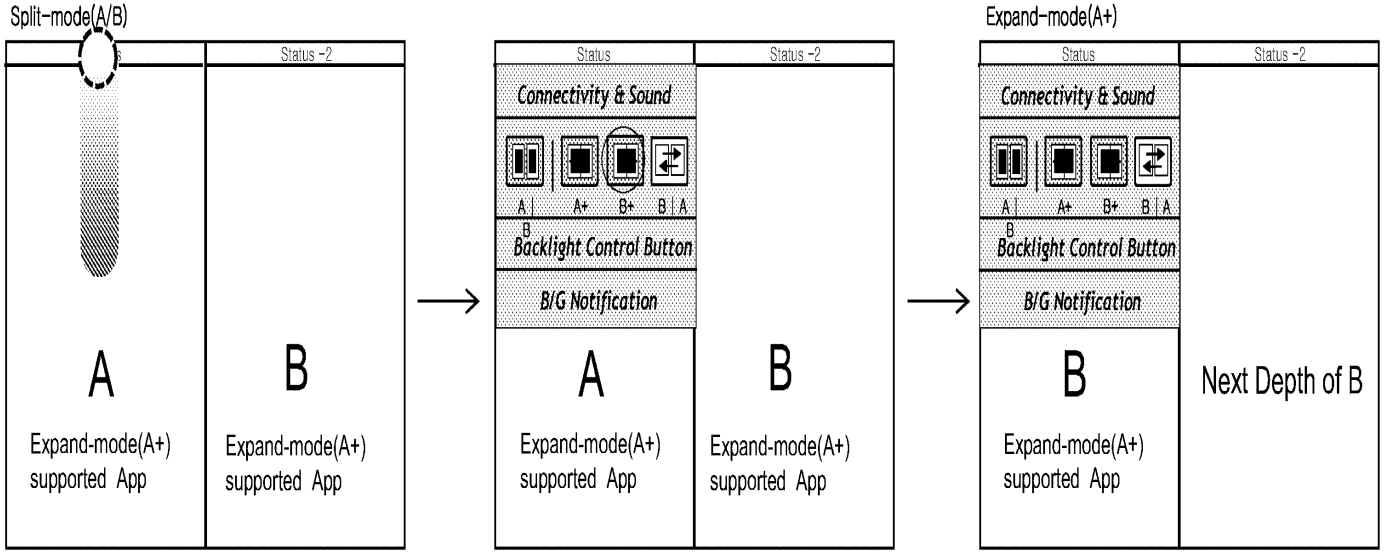
v.1.6 Updated
Dual Layout Change Buttons are Redesigned

● Split-mode(A/B) → Expand-mode(A+)
- When Expand-mode button is pressed at Split-mode, App in default side is displayed in two screen.

• Expand A



• Expand B



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8. Quick Panel

8.4 Mode Change

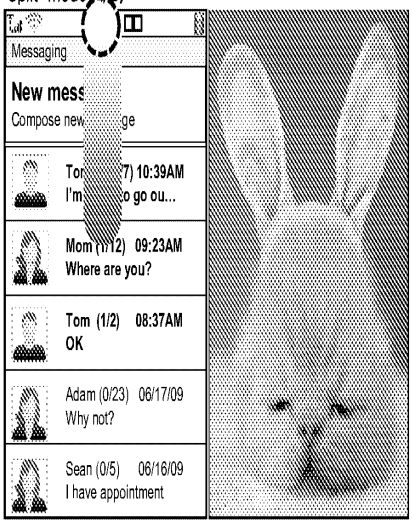
v.1.6 Updated
Dual Layout Change Buttons are Redesigned

Comment
Flow image for explain in each case. Quick Panel in Full screen view follow the general quick panel rule.

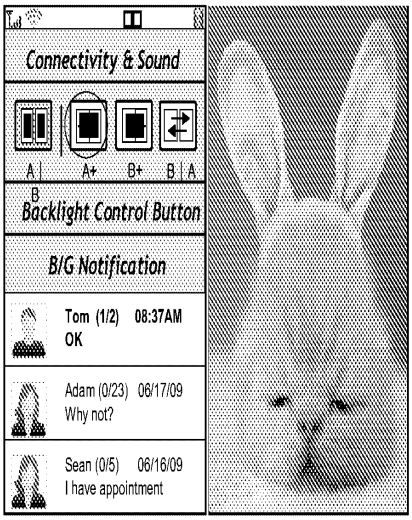
● Split-mode(A/B) → Expand-mode(A+) | Example

• Expand A

Split-mode(A/B)

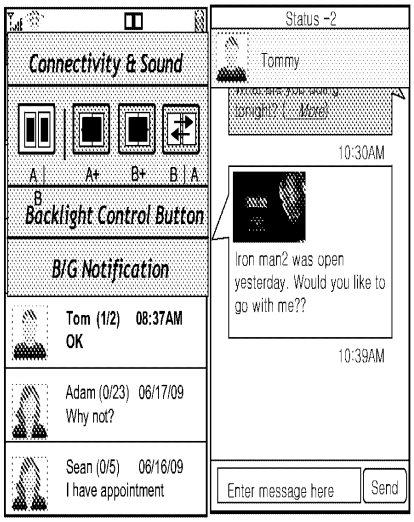


Expand-mode(A+) supported App



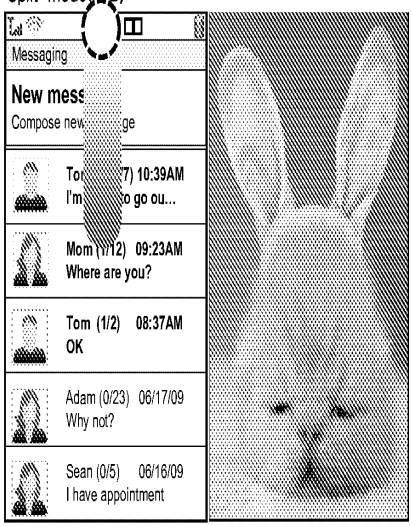
Expand-mode(A+) supported App

Expand-mode(A+)

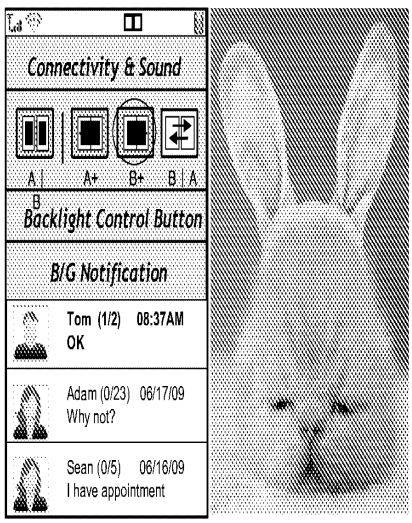


• Expand B

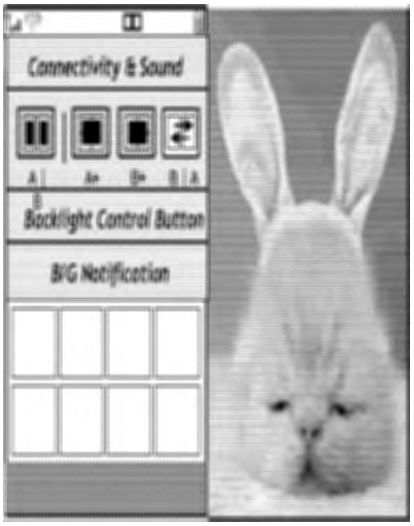
Split-mode(A/B)



Expand-mode(A+) supported App



Expand-mode(A+) supported App



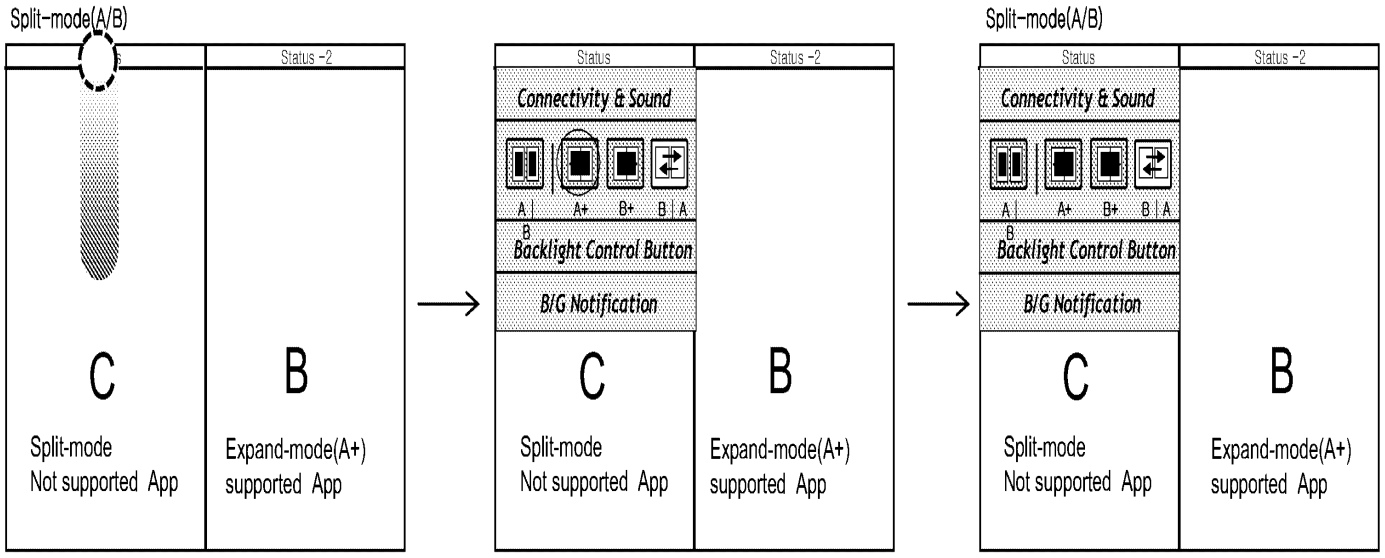
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8. Quick Panel

8.4 Mode Change

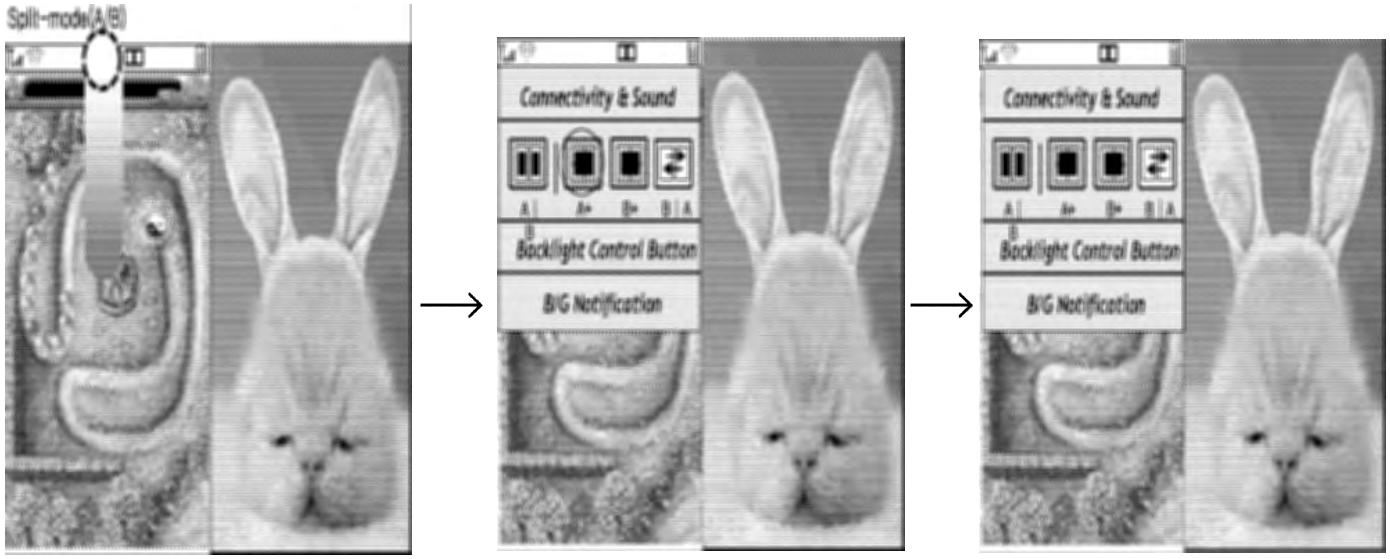
v.1.6 Updated
Dual Layout Change Buttons are Redesigned

● Split-mode(A/B) → Expand-mode(A+)
- When the App in default screen does not support Expand-mode, screens are not changed.



Splite Mode Not supported App

● Split-mode(A/B) → Expand-mode(A+) | Example



Splite Mode Not supported App

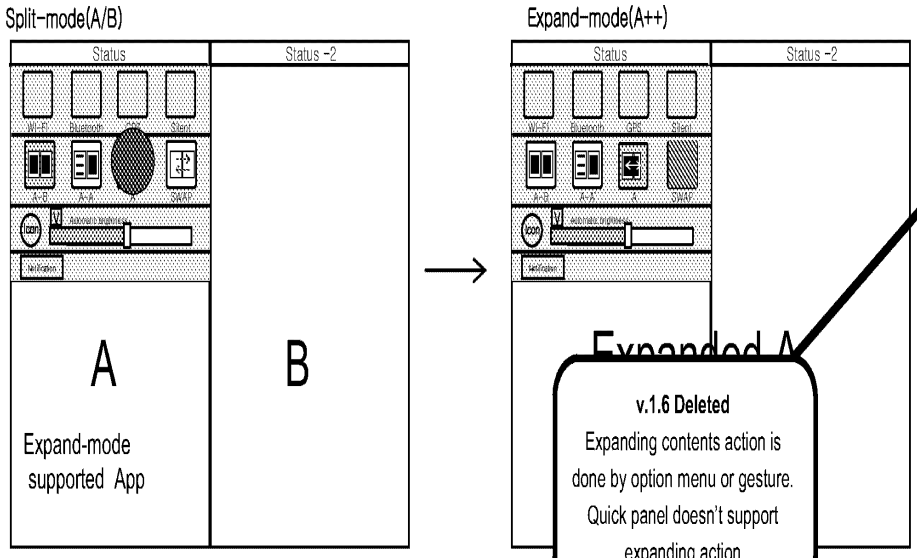
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8. Quick Panel

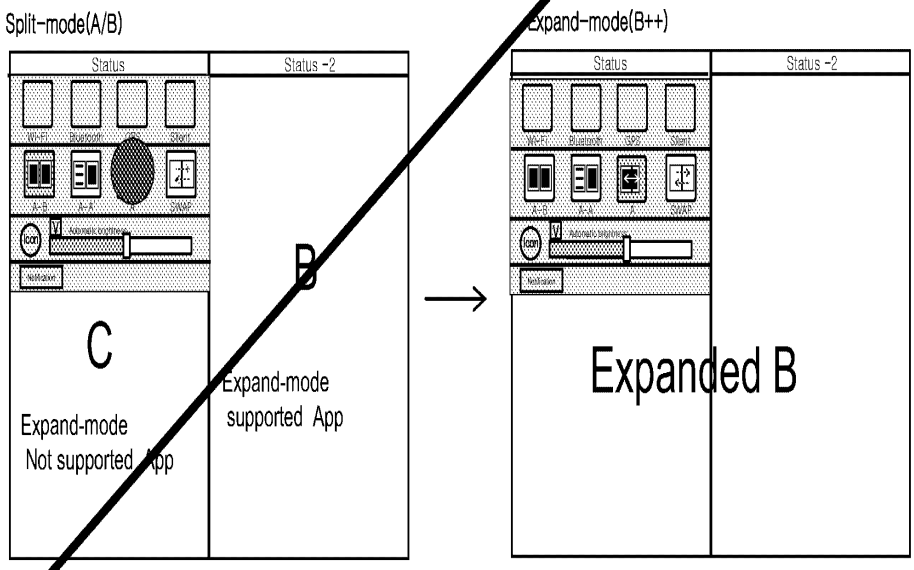
8.4 Mode Change

• Split-mode(A/B) → Expand-mode(A/A')
- When Expand-mode button is pressed at Split-mode, App screen in default side is expanded in two screen.
- When the App in default screen does not support Expand-mode, Another App screen is expanded in two screen.

• Default screen support Expand mode



• Default screen does not support Expand mode



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8. Quick Panel

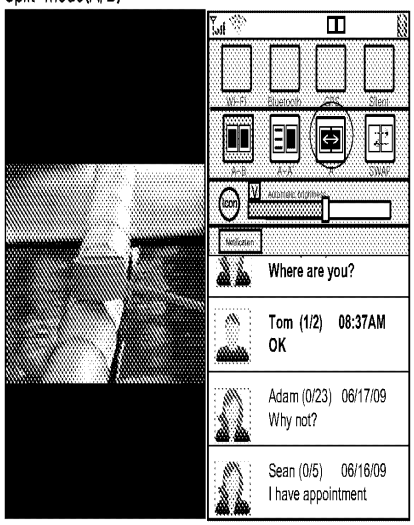
8.4 Mode Change

Comment
Flow image for explain in each case. Quick Panel in Full screen view follow the general quick panel rule.

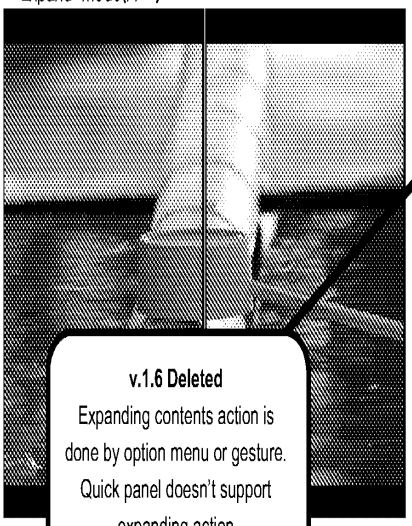
• Split-mode(A/B) → Expand-mode(A/A') | Example

• Default screen support Expand mode

Split-mode(A/B)



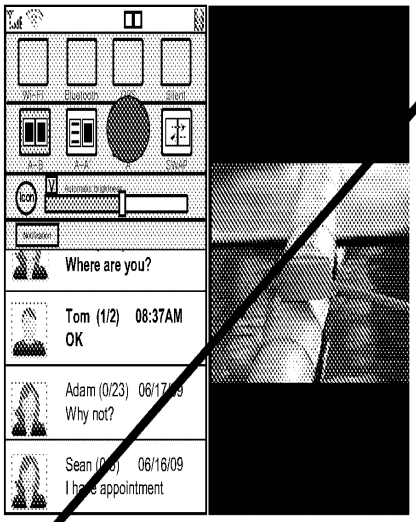
Expand-mode(A++)



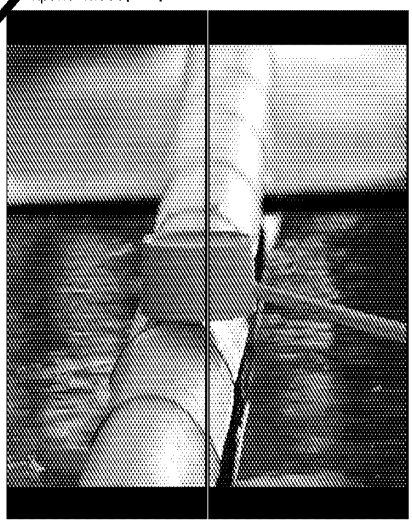
v.1.6 Deleted
Expanding contents action is done by option menu or gesture. Quick panel doesn't support expanding action.

• Default screen does not support Expand mode

Split-mode(A/B)



Expand-mode(B++)



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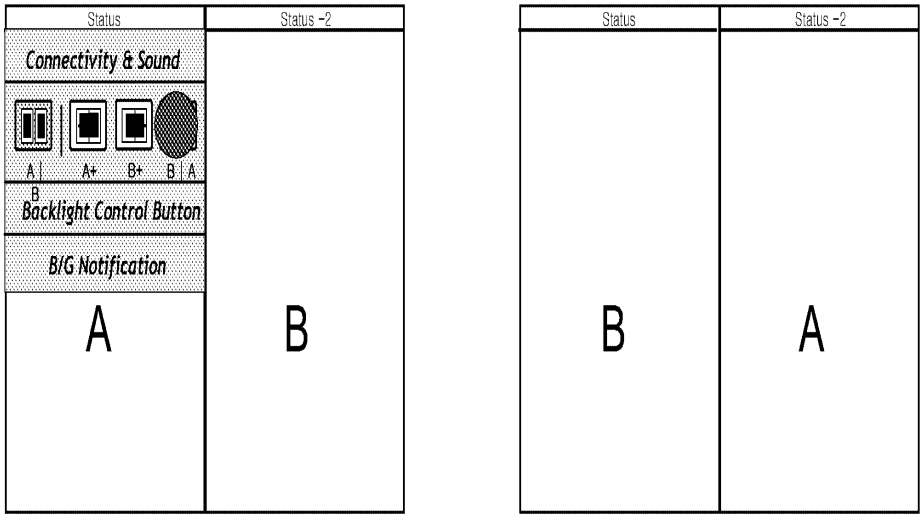
8. Quick Panel

8.4 Mode Change

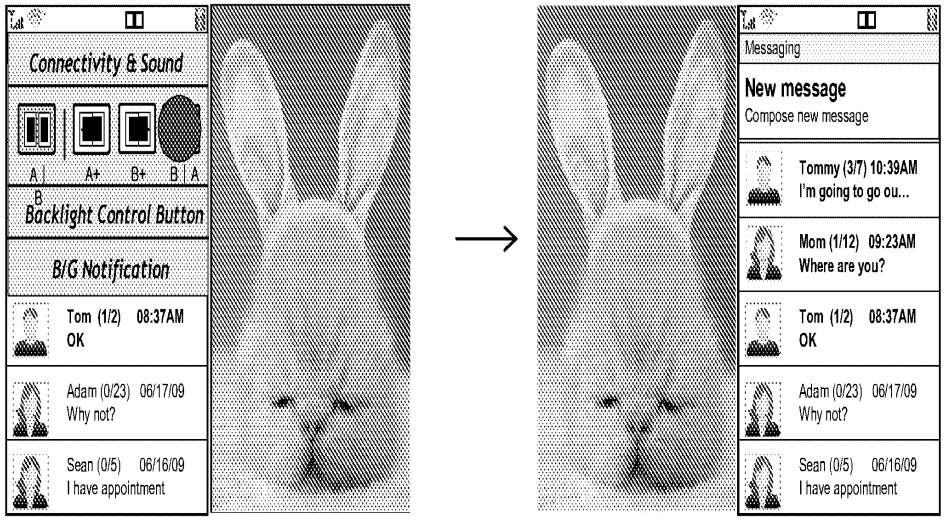
v.1.6 Updated
Dual Layout Change Buttons are Redesigned

Comment
Flow image for explain in each case. Quick Panel in Full screen view follow the general quick panel rule.

• Split-mode(A/B) → Split-mode(B/A) : Swap



• Split-mode(A/B) → Split-mode(B/A) | Example



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8. Quick Panel

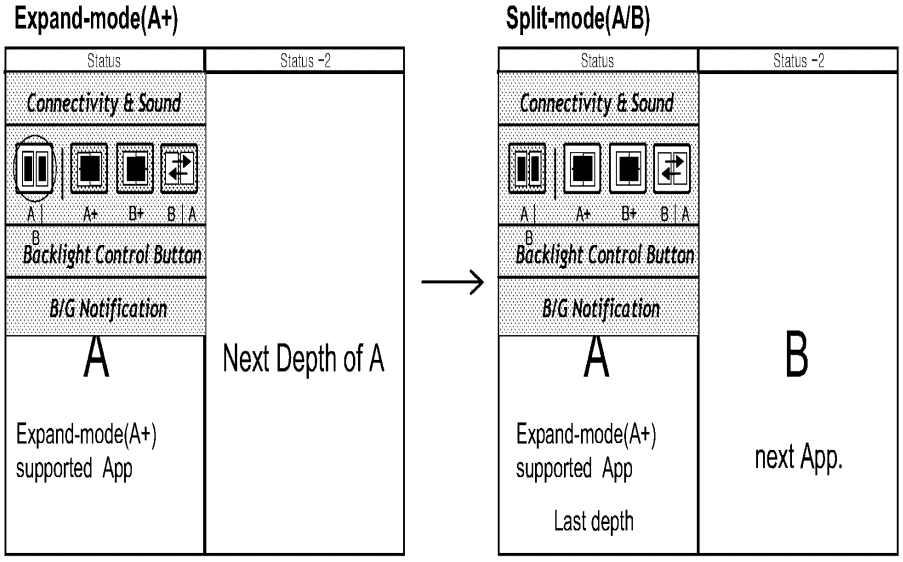
8.4 Mode Change

v.1.6 Updated
Dual Layout Change Buttons are Redesigned

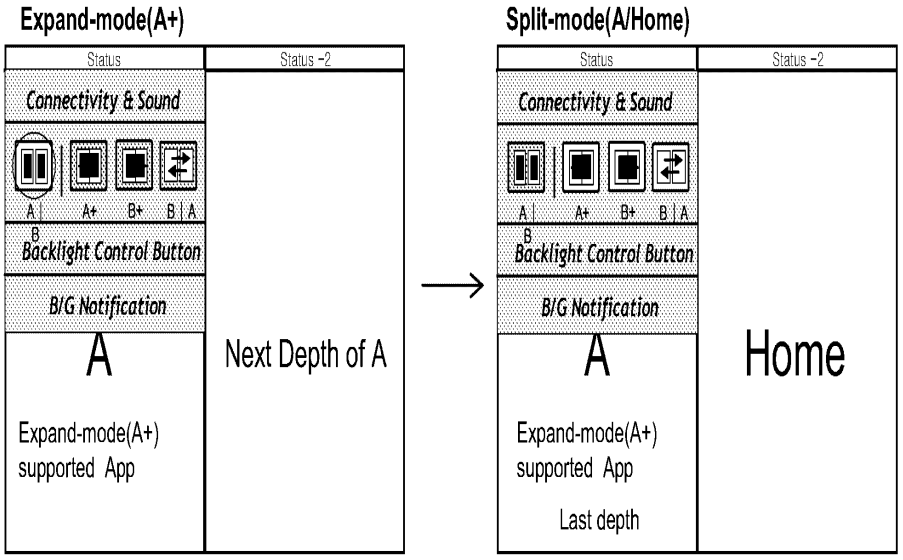
• Expand-mode(A+) → Split-mode(A/B)

- When Split-mode button is pressed at Dual-mode, screen in default side displays last depth of current app, another screen displays next App at task manger.
- If progress task is only one, then Home screen is displayed.

• Case : Multi-tasking



• Case : Single-tasking



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8. Quick Panel

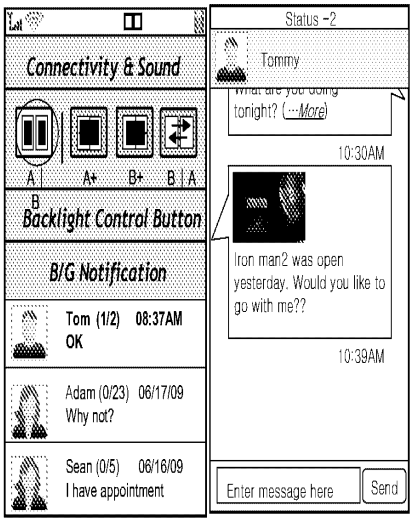
8.4 Mode Change

v.1.6 Updated
Dual Layout Change Buttons are Redesigned

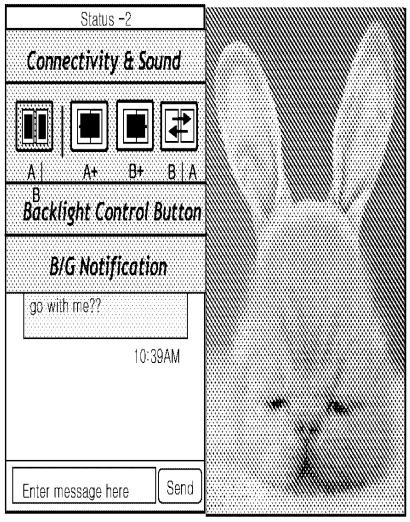
• Expand-mode(A+) → Split-mode(A/B) | Example

• Case : Multi-tasking

Expand-mode(A+)

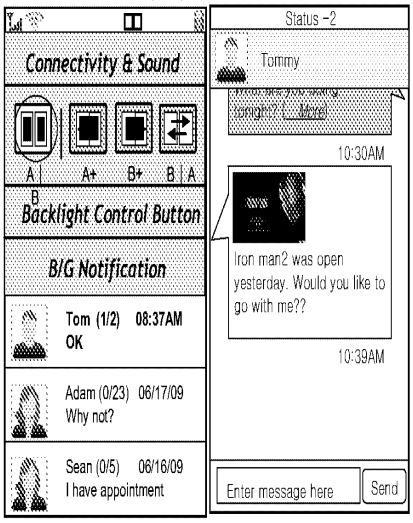


Split-mode(A/B)

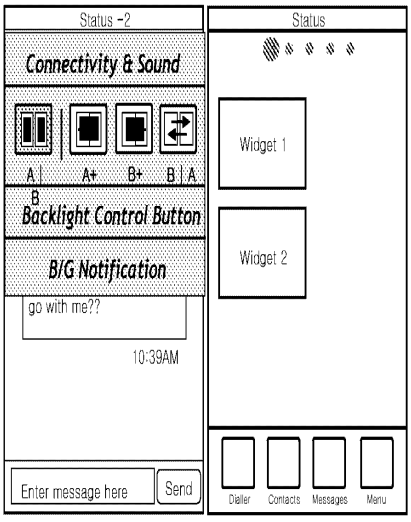


• Case : Single-tasking

Expand-mode(A+)



Split-mode(A/Home)



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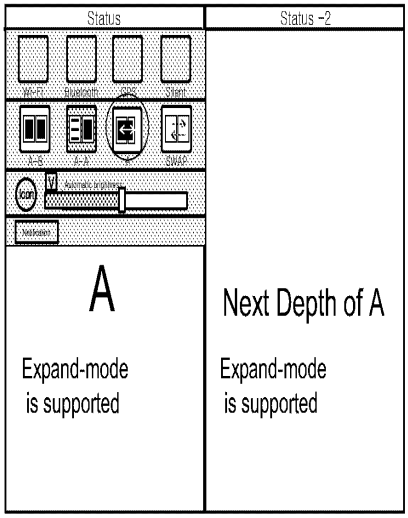
8. Quick Panel

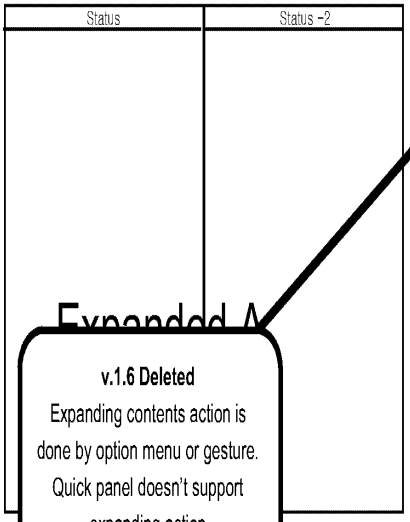
8.4 Mode Change

• Expand-mode(A+) → Expand-mode(A++)

- When Expand-mode button is pressed at Split-mode, App screen in default screen is expanded in two screen.
- If screen in default side does not support Expand-mode, then another screen is expanded in two screen.

• Support Expand-mode

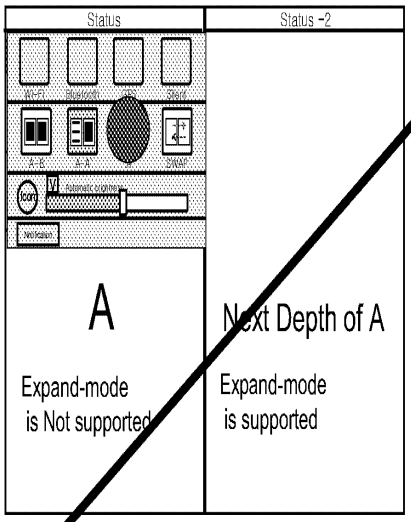


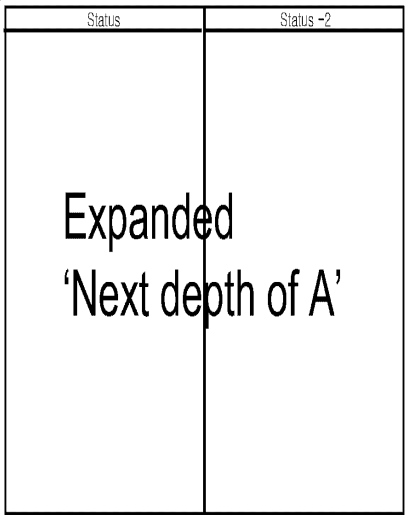


Expand-mode(A++)
Default side is left side.

v.1.6 Deleted
Expanding contents action is done by option menu or gesture. Quick panel doesn't support expanding action.

• Not support Expand-mode





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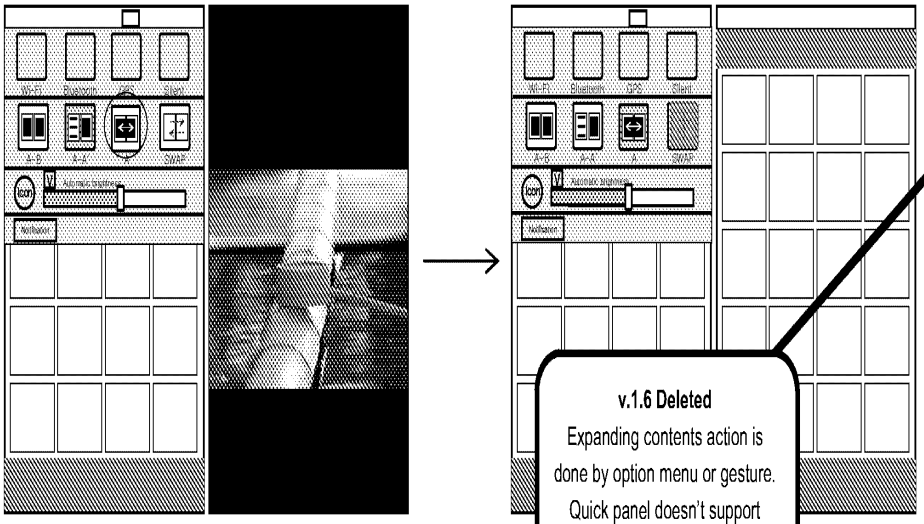
8. Quick Panel

8.4 Mode Change

Comment
Flow image for explain in each case. Quick Panel in Full screen view follow the general quick panel rule.

• Expand-mode(A+) → Expand-mode(A++) | Example

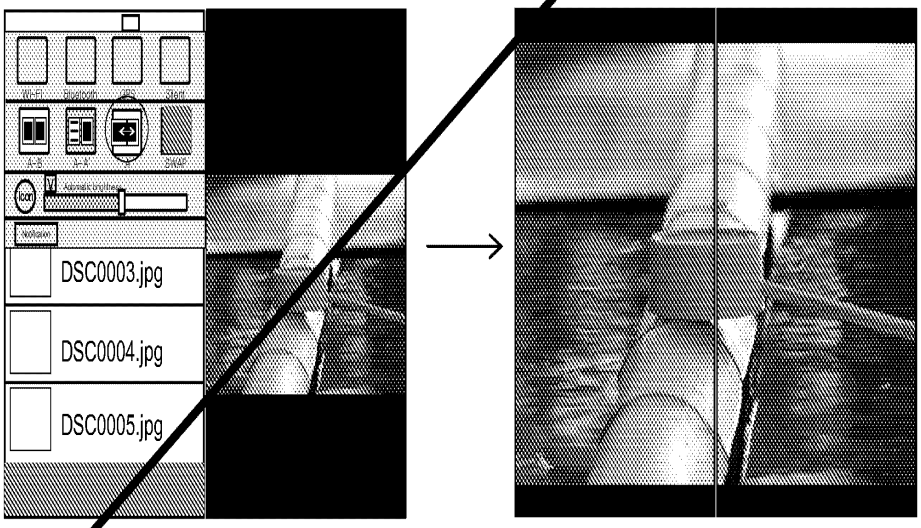
• Support Expand-mode



Expand-mode(A++)
Default side is left side.

v.1.6 Deleted
Expanding contents action is done by option menu or gesture. Quick panel doesn't support expanding action.

• Not support Expand-mode



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8. Quick Panel

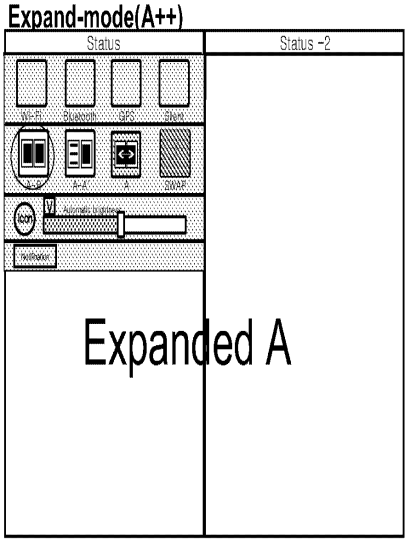
8.4 Mode Change

• Expand-mode(A++) → Split-mode(A/B)

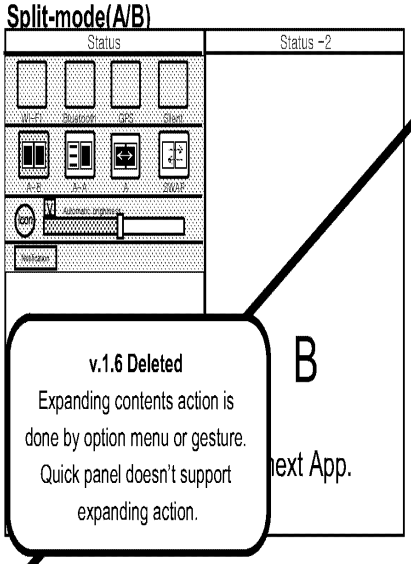
- When Split-mode button is pressed at Expand-mode, screen in default side is displayed current app, another screen is displayed next App at task manger.
- If progress task is only one, then home screen is displayed.

•Multi-tasking

Expand-mode(A++)



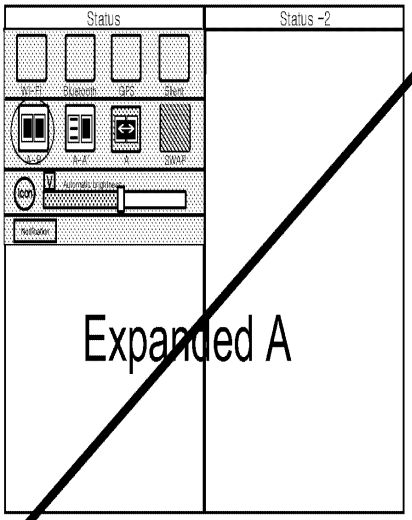
Split-mode(A/B)



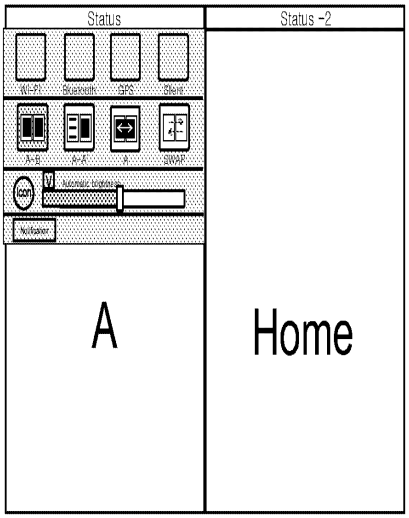
v.1.6 Deleted
Expanding contents action is done by option menu or gesture. Quick panel doesn't support expanding action.

•Single-tasking

Expand-mode(A++)



Split-mode(A/Home)



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8. Quick Panel

8.4 Mode Change

Comment
Flow image for explain in each case. Quick Panel in Full screen view follow the general quick panel rule.

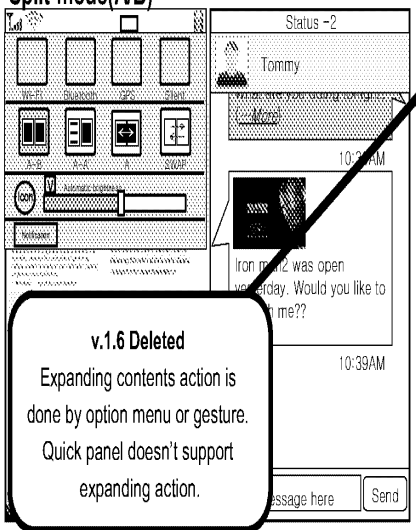
• Expand-mode(A++) → Split-mode(A/B) | Example

•Multi-tasking

Expand-mode(A++)



Split-mode(A/B)

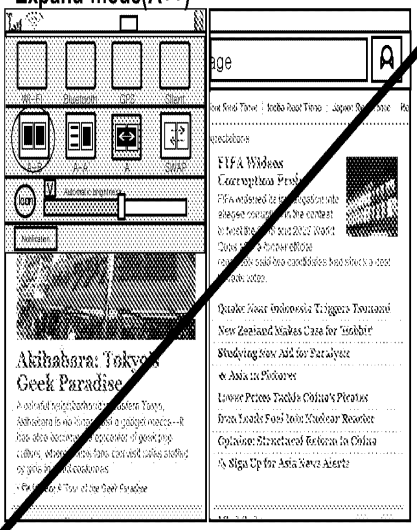


v.1.6 Deleted
Expanding contents action is done by option menu or gesture. Quick panel doesn't support expanding action.

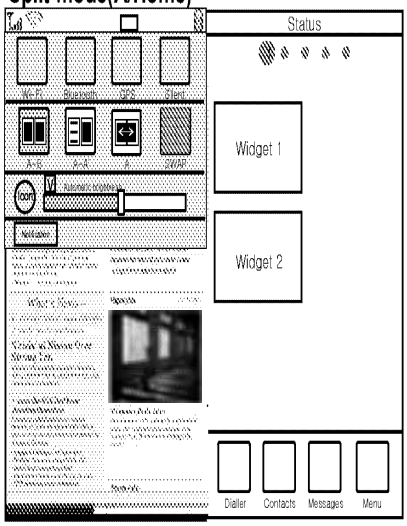
A : Web Browser B : Message

•Single-tasking

Expand-mode(A++)



Split-mode(A/Home)



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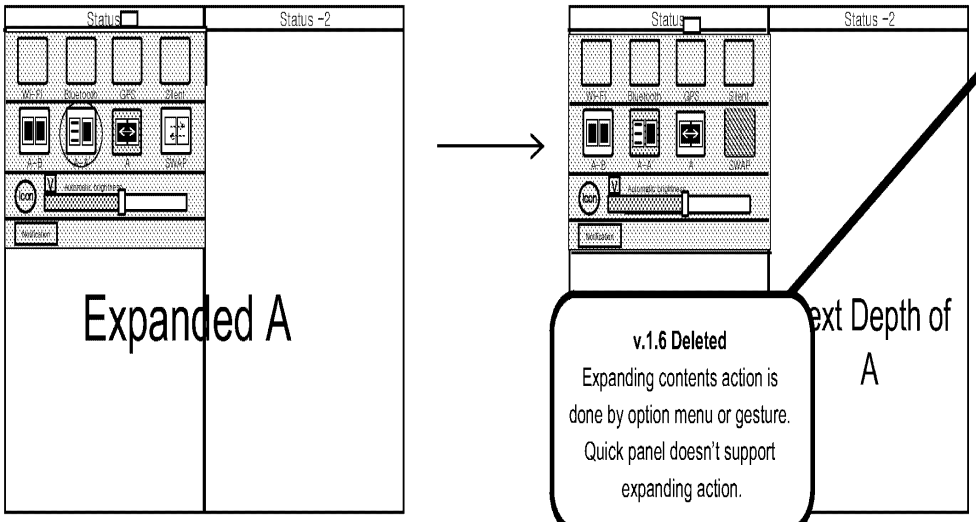
8. Quick Panel

8.4 Mode Change

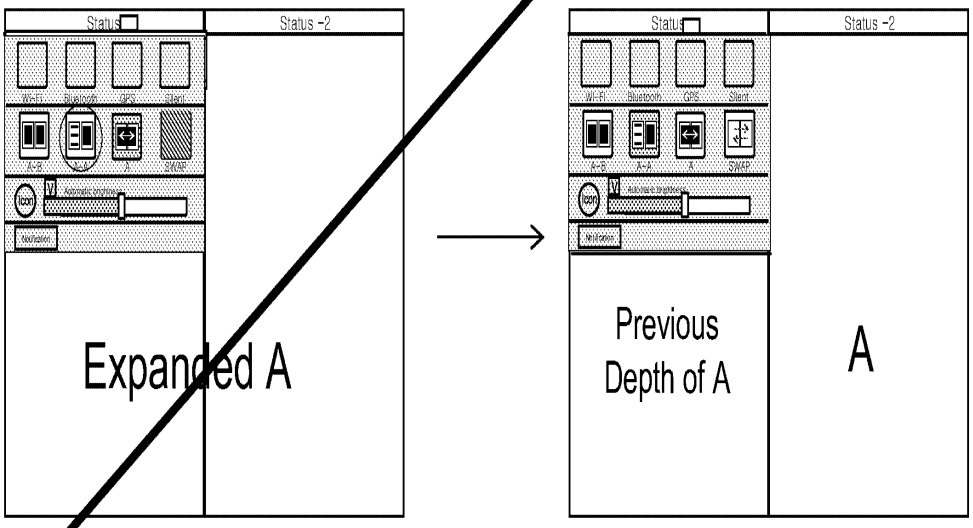
•Expand-mode(A++) → Expand-mode(A+)

- When Split-mode button is pressed at Expand-mode, App in default side is displayed current screen and another screen is displayed sub-depth.
- If current screen is last depth, previous depth is displayed left side and current screen is displayed right side.

• support sub-depth



•Last-depth



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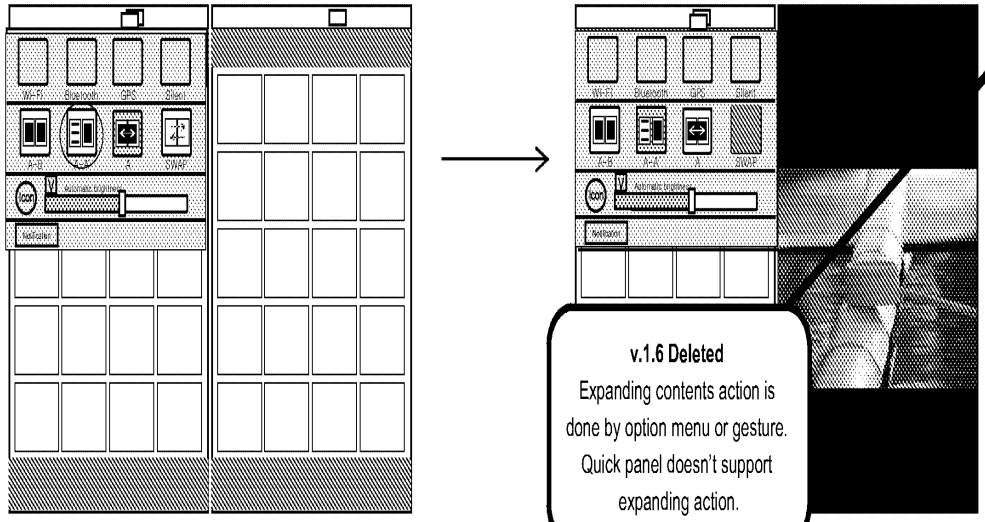
8. Quick Panel

8.4 Mode Change

Comment
Flow image for explain in each case. Quick Panel in Full screen view follow the general quick panel rule.

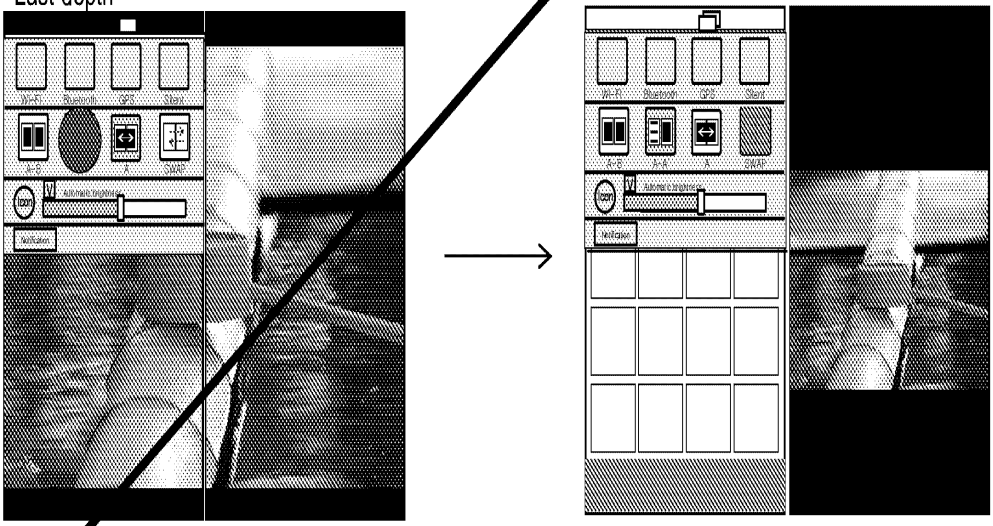
•Expand-mode(A++) → Expand-mode(A+) | Example

• support sub-depth



v.1.6 Deleted
Expanding contents action is done by option menu or gesture. Quick panel doesn't support expanding action.

•Last-depth



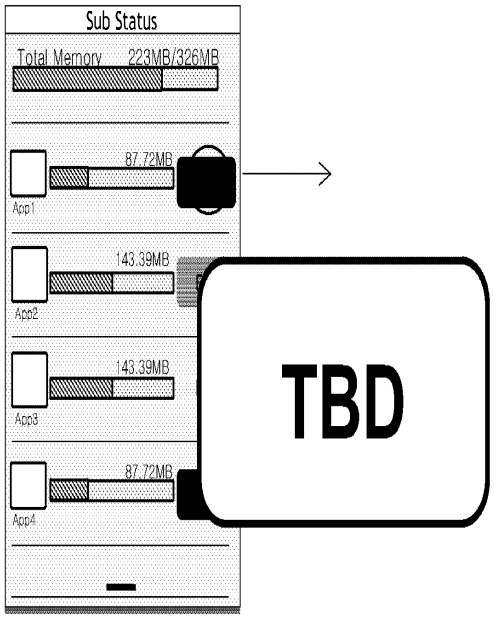
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8. Quick Panel

8.5 Definition of 2nd Quick Panel

v.1.5 Updated
Sub Quick Panel Should be Changed

Comment
See 'Task Manager' guideline



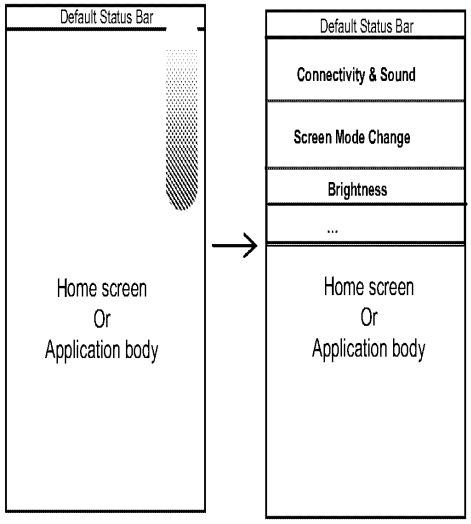
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8. Quick Panel

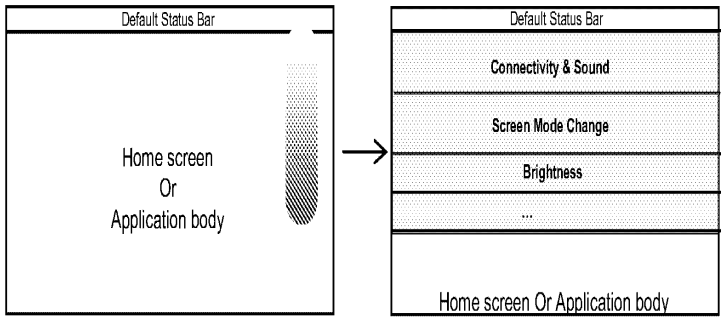
8.6 Basic Flow

- For Single Screen(Folded), Default Status Bar and Default Quick Panel are always shown.
- Default working is same as existing Android UI.

[One Screen(Folded) : Portrait mode]



[Landscape mode]

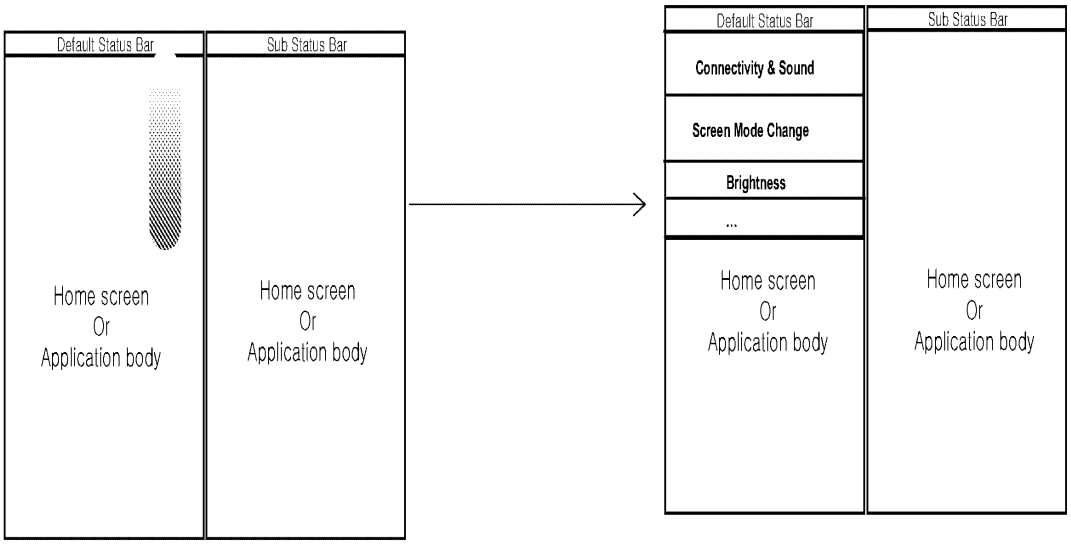


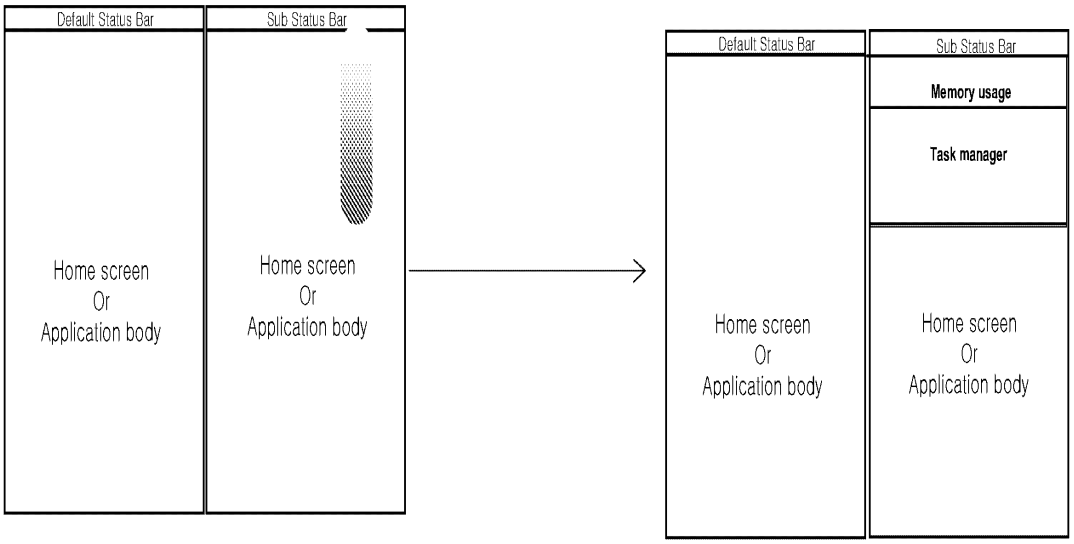
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8. Quick Panel

8.6 Basic Flow

• When each task-bar appears in both screen in the portrait Dual Screen,
default status bar is shown at left screen and sub status bar is shown at right screen.



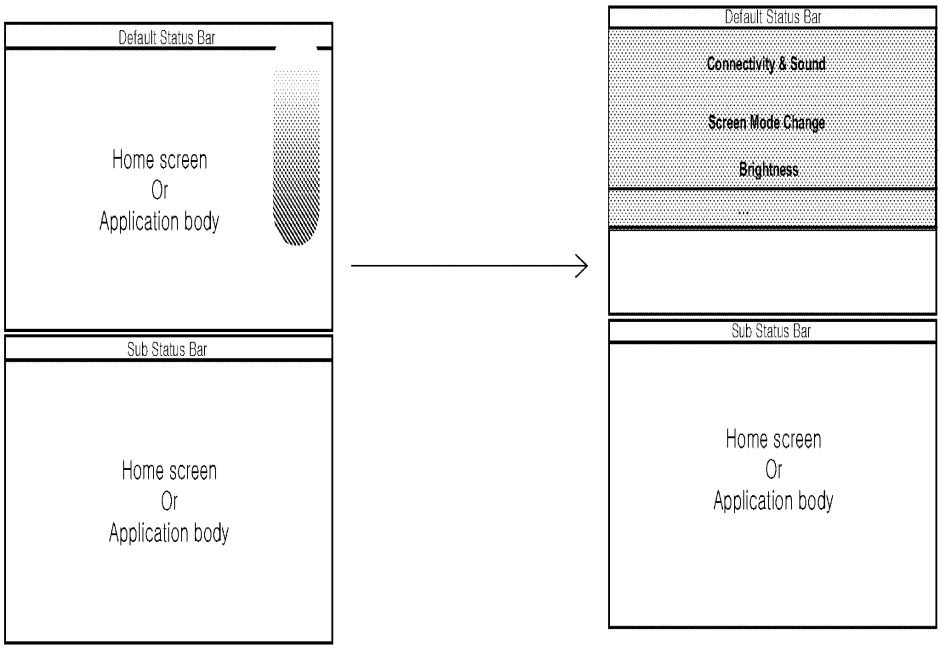


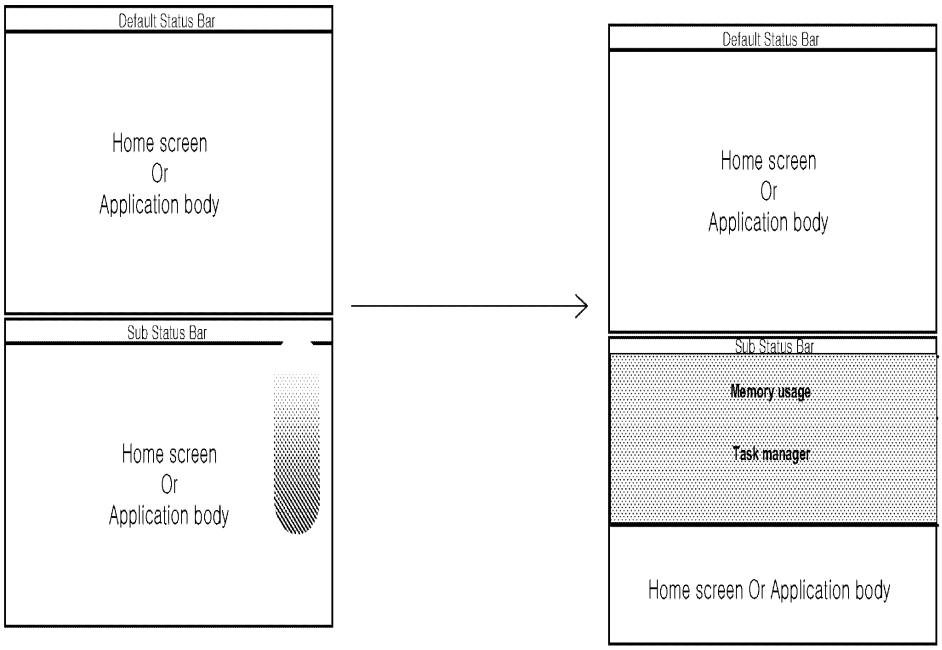
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8. Quick Panel

8.6 Basic Flow

- When each task-bar appears in both screen in the landscape Dual Screen, default status bar is shown at upper screen and sub status bar is shown at lower screen.



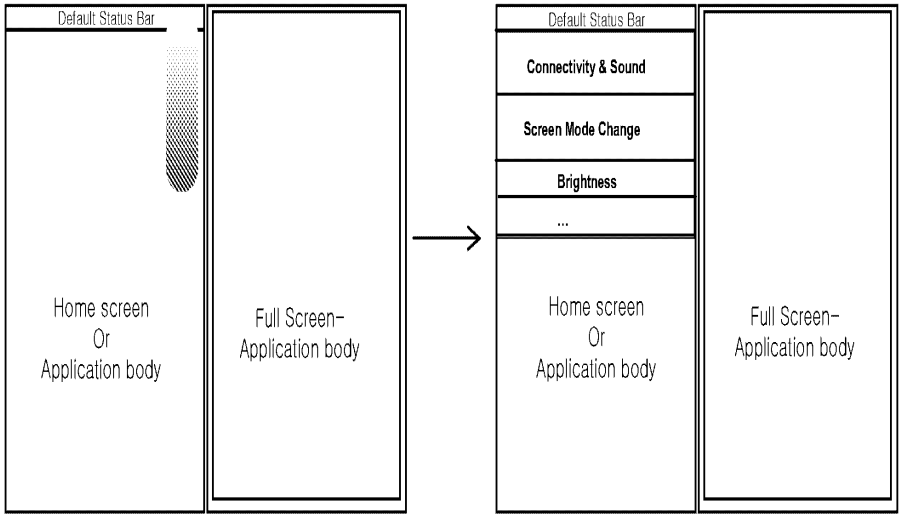


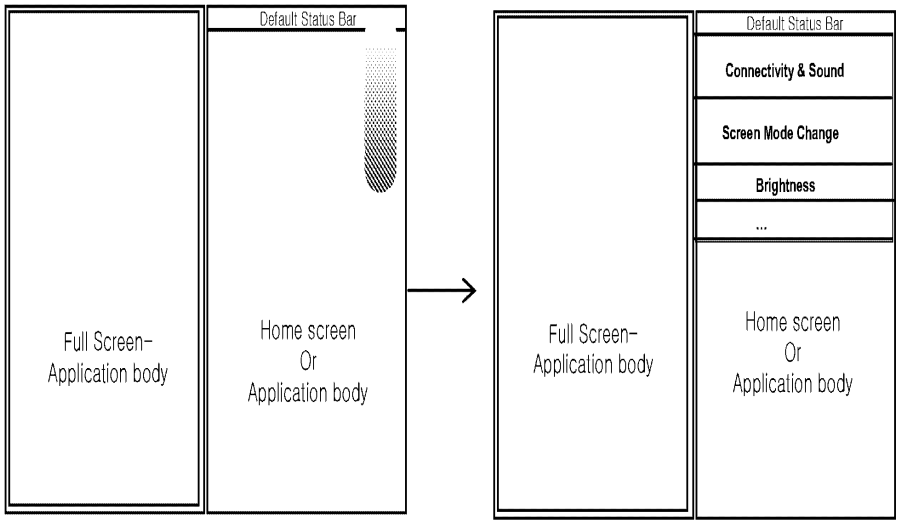
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8. Quick Panel

8.6 Basic Flow

• If only one screen has the status bar area, always Default Status Bar is shown.



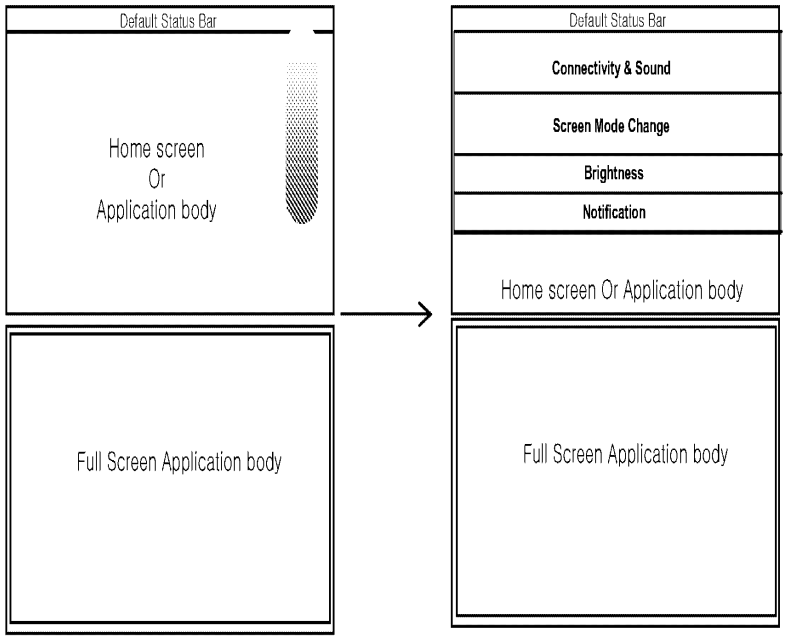


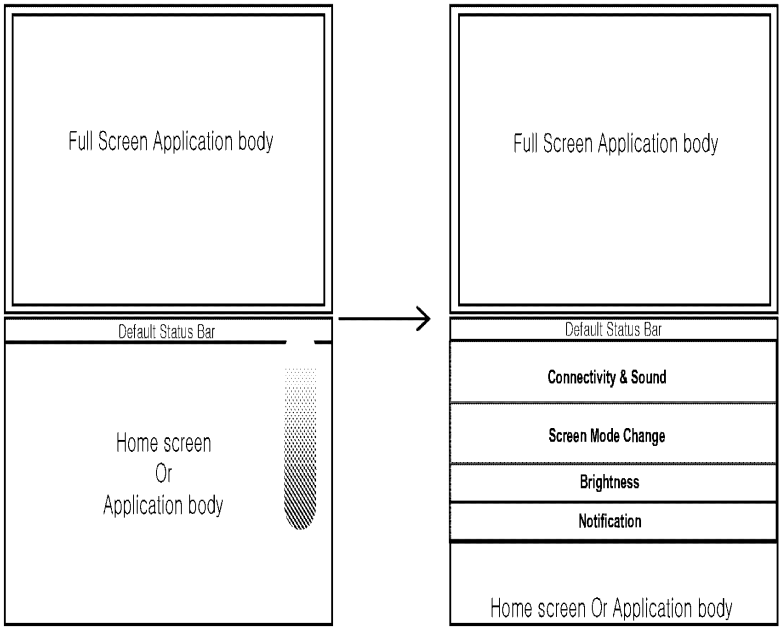
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8. Quick Panel

8.6 Basic Flow

• If only one screen has the status bar area, always Default Status Bar is shown.





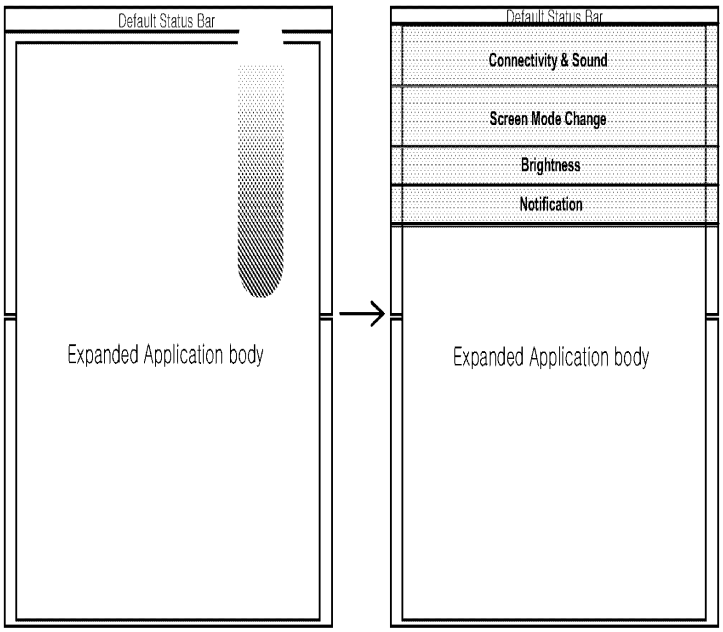
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8. Quick Panel

8.6 Basic Flow

•Default status bar is shown at expanded mode.

[Expanded Mode]



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Unlock

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9. Unlock

9.1 Definition of Unlock (Hold Key Interaction)

TBD

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9. Unlock

9.2 0° / 60° / 180° Unlock Basic Flow

TBD

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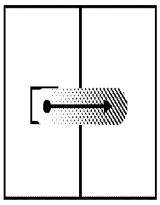
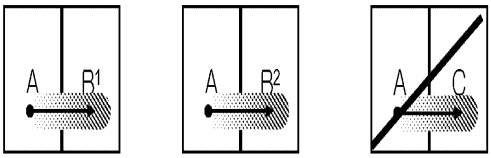
Basic Interaction between 2 Screens

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The graphic is for illustrative purposes only and may not represent the actual implementation.

10.1 Definition of Interaction

v.1.5 Updated
Object Flick gesture deleted

Type		Description	Use cases
Object Drag & Drop		- User select content and drag and drop in other screen. - 200~300ms	

- move of contents is dependent on App and screen layout.

A : User can select contents.
B : User can use another App contents in this App. (email, Message, Memo, etc)
- B^1 : There are many contents play route. (Contact List, Message List, etc)
- B^2 : There is only one play route (New Message Input, Memo Input, etc)

C : User can not use another App contents in this App (Game, Web browser, etc)

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The graphic is for illustrative purposes only and may not represent the actual implementation.

10.1 Definition of Interaction

• **Contents type & data**

Type		Included Data	Icon Style
Image	Local Image (Full View, List)	Image, Date, (Geo Tag Info), (Social Tag)	Photo Thumbnail
	Image on the Web	Image, (Date), (Geo Tag Info), Web-link	Photo Thumbnail
	Contact Image	Image, Date, (Geo Tag Info), (Social Tag)	Photo Thumbnail
Music	Local Song with Cover Art (Including Now Playing)	Song File, Music Info(ID3Tag), Cover Image	Cover Thumbnail+ 1 Song Icon
	Song in Web	Music Info(ID3Tag), Cover Image, Web-link	Cover Thumbnail+ 1 Song Icon
	Local Album	Song Files, Music Info(ID3Tag), Cover Image	Cover Thumbnail+ Songs Icon
Movie	Local Movie (Full View, List)	Movie File, Screen Shot Image	Screen Shot
	Movie in Web (Full View, List)	Web Link, Screen Shot Image	+ YouTube Icon
	Created Movie (Full View, List)	Movie File, Screen Shot Image, D	, Camcorder Icon
Text	Selected Text	Text	
Link Text	URL Text (Except Service URL Text)	Web Link, Text	Browser Icon)
	Service URL	Web Link, Text	Web Icon (Browser Icon)
	Contact Information Text (Exist Contact)	Copied Contact Data(=Text), Contact Image	Contact Thumbnail + Comm. Icon
	Contact Information Text (Non Exist Contact)	Copied Contact Data(=Text), Default Contact Image	Default Thumbnail + Comm. Icon
	Image Link Text	Image, Date, (Geo), (Social Tag), Text	Photo Thumbnail + Service Icon
	Movie Link Text	Screen Shot Image, Text	Screen Shot + Service Icon
	Music Link Text	Cover Image, Music Info(ID3Tag), Text	Cover Thumbnail + 1 Song Icon
Contact	Contact	All Contact Data, Contact Image	Contact Thumbnail
	Specific Contact	Contact Data, Contact Image	Contact Thumbnail + Comm. Icon
Calendar	Schedule	Schedule Info.	Calendar Thumbnail + Date
Map	Map Screen	Web-Link, Pin on the map (Screenshot Image)	Map Thumbnail
App	Menu	App. Shortcut, Downloadable Link	App. Shortcut

TBD

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10.1 Definition of Interaction

• **Application actions according to the contents type which is sent by 'drag and drop' or 'select and flick'**

		Home	Applications	Browser		Ebook		Messaging			Camera	Memo			Video Player		Contacts					Phone			Calendar						Gallery			Maps		
		Page	Page	Page	Bookmark	Shelf	Page N	List	Detail	New Mess.	Camera	List	Detail	New Memo	List	Play	List	Groups	History	Activities	New Contact	Keypad	Logs	Favorites	Month	Week	Day	List	Detail	New Event	Group	Thumbnail	Detail	Map	Search	Path
Image	Local Image (Full View, List)																																			
	Image on the Web																																			
	Contact Image																																			
Music	Local Song with Cover Art (Including Now Playing)																																			
	Song in Web																																			
	Local Album																																			
Movie	Local Movie (Full View, List)																																			
	Movie in Web (Full View, List)																																			
	Created Movie (Full View, List)																																			
Text	Selected Text																																			
Link Text	URL Text (Except. Service URL Text)																																			
	Service URL																																			
	Contact Information Text (Exist Contact)																																			
	Contact Information Text (Non Exist Contact)																																			
	Image Link Text																																			
	Movie Link Text																																			
	Music Link Text																																			
Contact	Contact (Specific Contact)																																			
Calendar	Schedule																																			
Map	Map Screen																																			
App.	Menu																																			

TBD

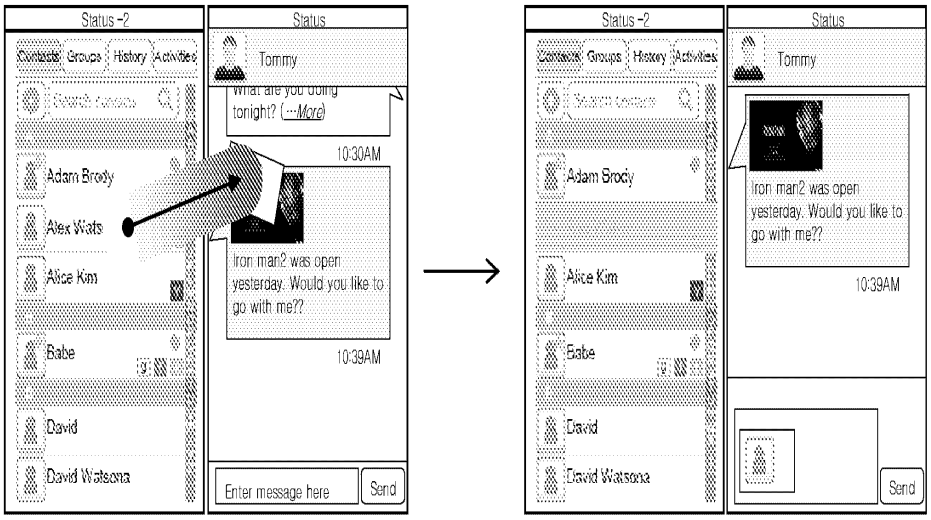
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The graphic is for illustrative purposes only and may not represent the actual implementation.

10.2 Basic Flow

- **Select content and Drag & Drop to any position of another App.**
- If target already selected, user can Drag & Drop content to any position of another App.

Drag & Drop to nonspecific position



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Text Input

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11. Text Input

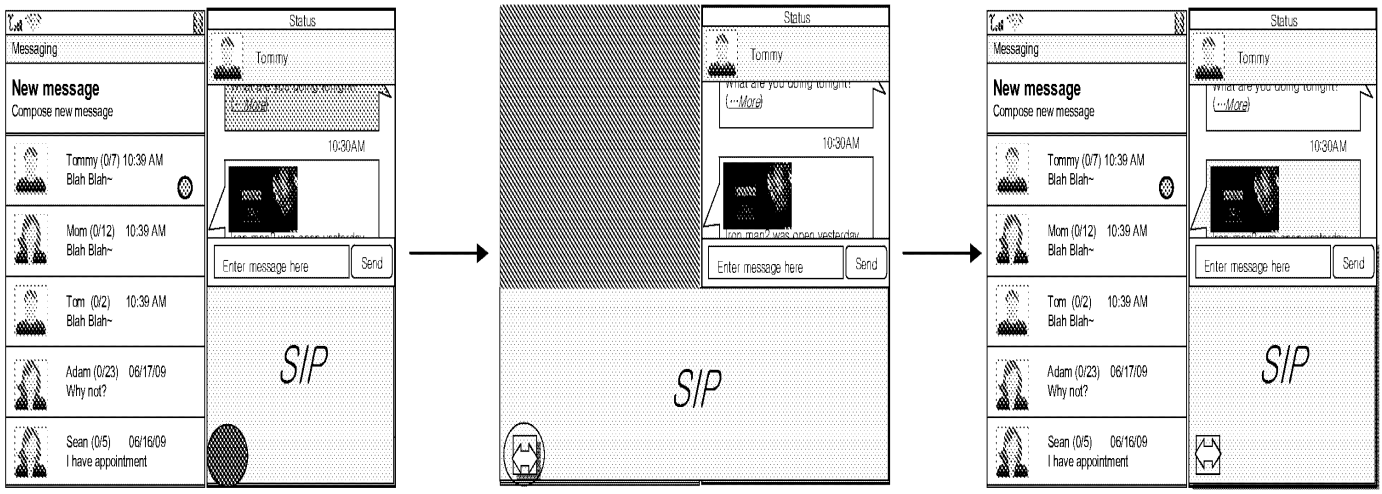
11.1 Virtual Keyboard Layout

v.1.5 Updated
Gesture for expanding SIP is deleted.
SIP is expanded only by Expand Button on the SIP

- SIP Expand Button

- SIP could be displayed with Single Screen Mode or Expand Mode.
- SIP is expanded or minimized by additional button on the SIP.

Expanded by additional button on the SIP

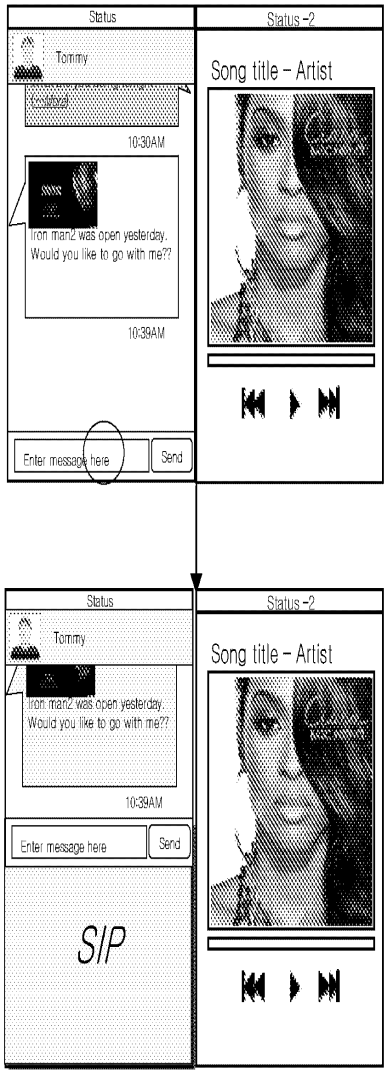


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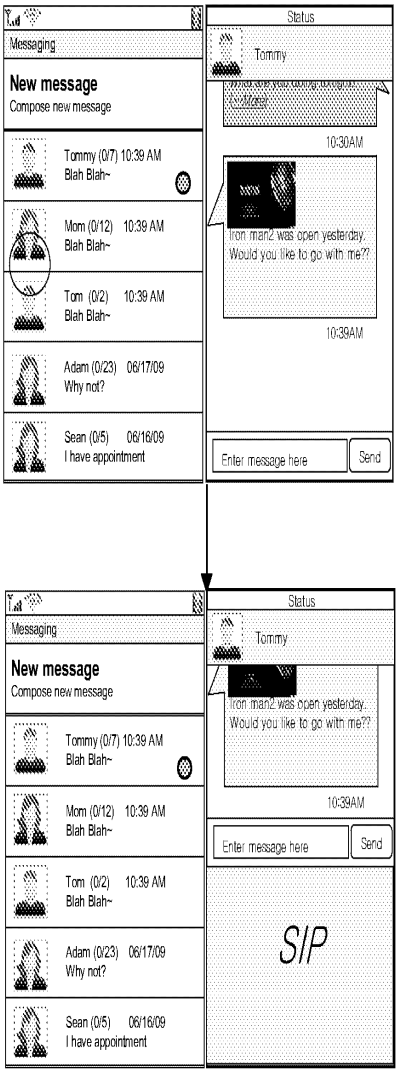
• SIP – Vertical : QWERTY keypad is displayed on the selected screen.

- When the layout is expand-mode, QWERTY keypad is expanded to fit with two screens.

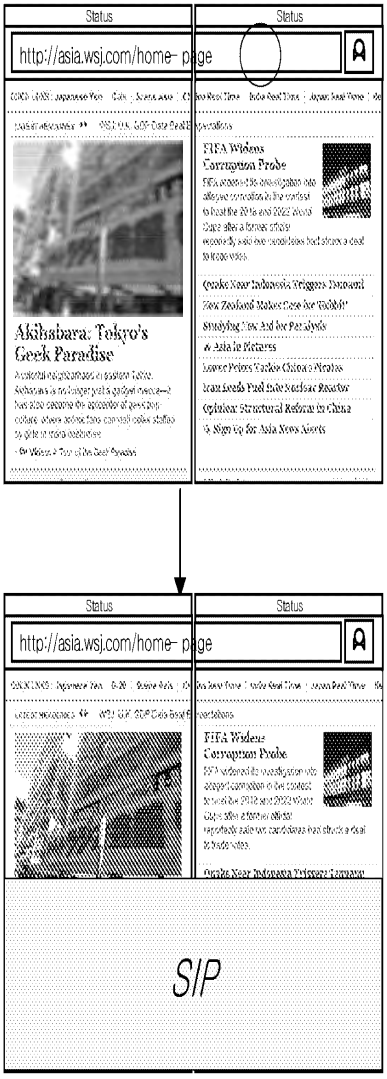
Split-mode



Split-Mode



Expand-Mode



When the layout is expand-mode, QWERTY keypad is expanded to fit with two screens.

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• SIP – Horizontal : QWERTY keypad is always displayed on the lower screen.

- When user start to input texts on the upper screen, two screens are automatically swapped to display QWERTY keypad on the lower screen.

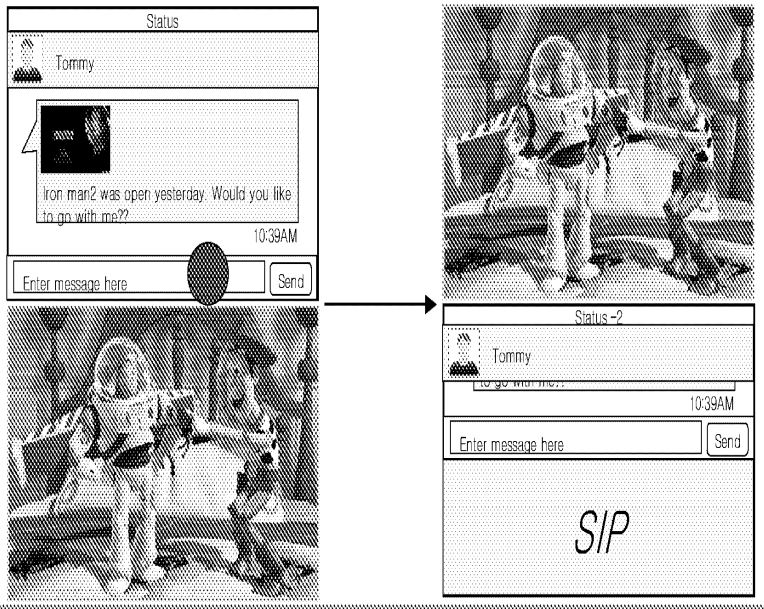
When user start to input texts on the lower screen



11/03
QWERTY가 필요한 화면이
아래로 내려가도록
두 스크린을 자동 swap

Display QWERTY keypad on the lower screen.

When user start to input texts on the upper screen



Automatically swap two screens
to display QWERTY keypad on the lower screen.

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Interruption

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12. Interruption

12.1 New Notification

TBD

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12. Interruption

12.2 Incoming Call

TBD

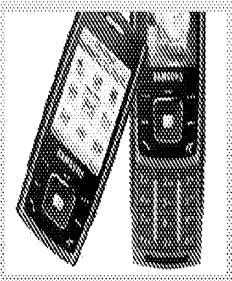
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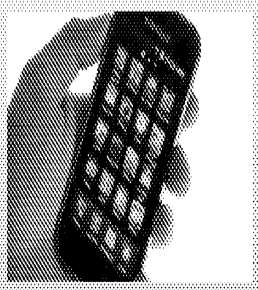
Dual Display UX
Interaction Concept

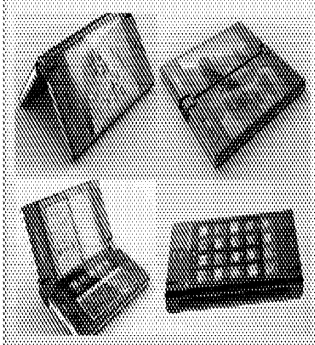
근 | Display에 따른 Interaction

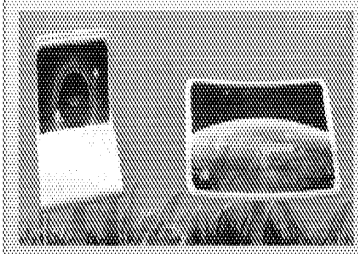
Display 신에 따른 Interaction 전

/ 리	+	Display 구	Display
• Viewing Small Screen • 보조 Display를 통 Quick Info. 제	• Viewing 과 력 결 통 Display	• Dual Screen 적 으로 된 적 최대	• Foldable Display로 Display를 나 으로 사 • Flexible Display로 작 사 는 Large Screen 제
UI	• 력 과 리 • focus와 선택 통 Interaction	• 출력 결 • 간 Gesture Interaction	• Display 구 간 • 체 간 Interaction	• Flexible 간 Interaction









01 Transformable / Adaptive Form factor

에 따라, 디바이스 각도를 바꿔가며, 적 Form factor로 여,
Quick Mode, Standing Mode, Expand Mode 다 식 터랙션 제

In-Folded creen
210°



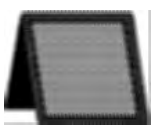


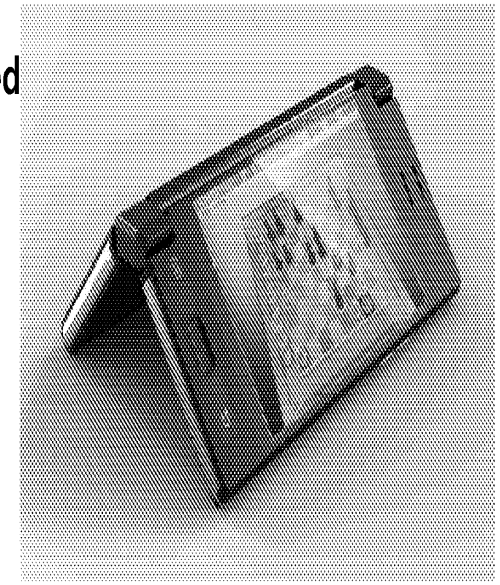
Double creen
1 0 °



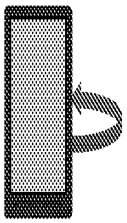


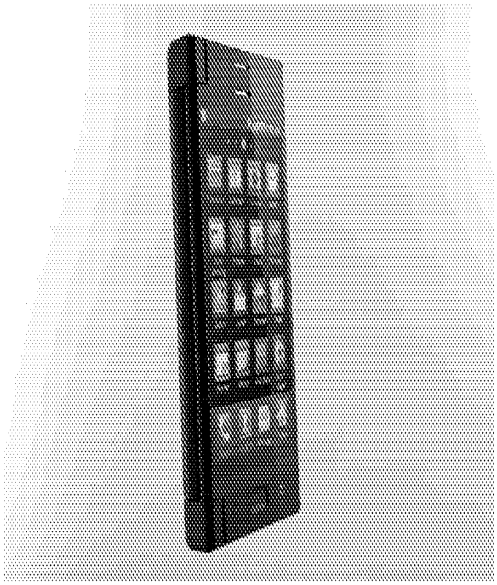
Out-Folded creen
0°



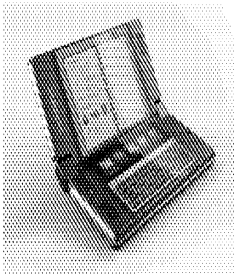


One creen
0°





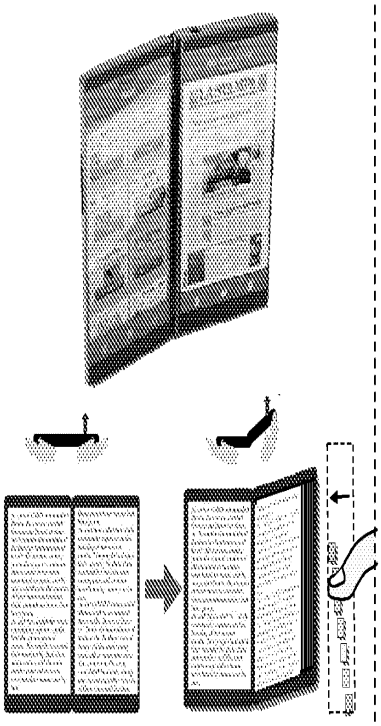
Form 01 | In-Folded creen 210°



• 두 Screen이 Folded 된 태를 메타포에 여, E-book, 전자사전, 개 , Home 기 수 시 기 과 가 숙 제 태를 제 으로써 사 높이고, 적 제 .

• 지를 고 펴는 터랙션 식 여, 새로 터랙션 제 .

E-book



책 들춰보는 것과 유사 터랙션으로 실제로 책 보는 듯 제

Customized Home



지 , 여 파우더 시키는 친숙 고 새로 Home UI 제 . 사 자가 는 Home 모드로 선택

Personal roadcastin

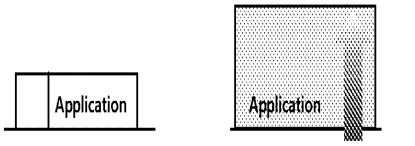


/뒤 카메라로 배 과 내 모 동시에 으며 개 . 세로모드는 그 이 고, 가로모드는 중, 커뮤니케이션에 유

Form 01 | In-Folded creen 210°

Customized Home

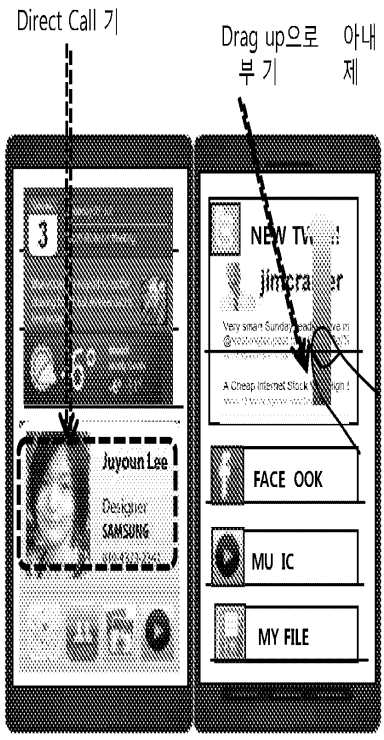
- 듀얼 디스 레이를 여는 션 메타포에
- 사 자 사 격에 따른 구
- Widget 크기에 따라 사 제 어 컨트롤 가



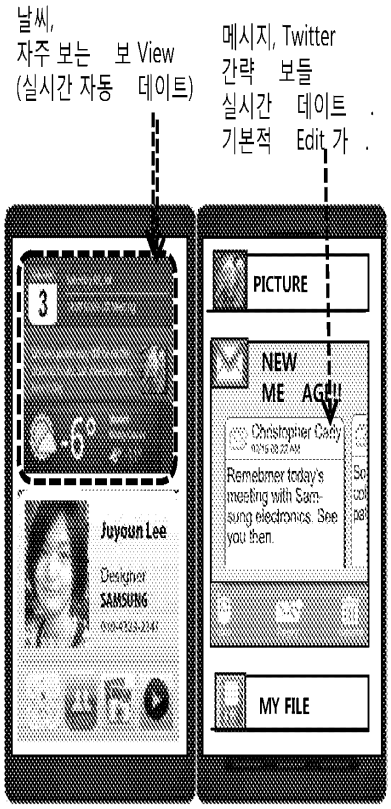
Wid et Mode
: Hotkey 로

Wid et Mode
: 근 보
실시간 보 update
부기 수 가





Direct Call 기 , 로가기 구 가
기 기 가

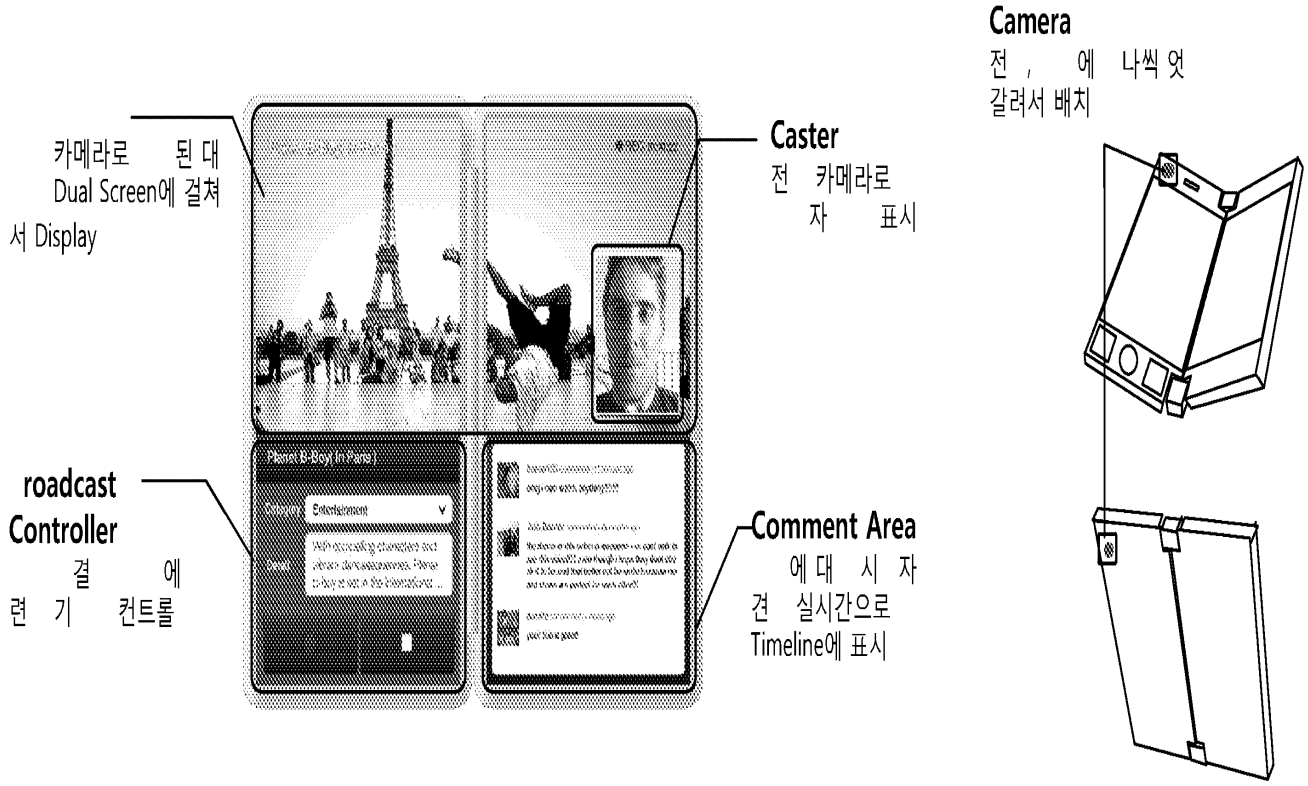


시지, 개 보 보
app 시 Viewer
기

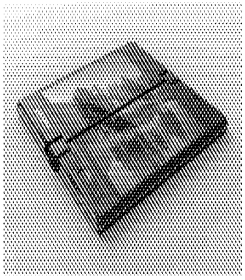
Form 01 | In-Folded creen 210°

Personal roadcast

피사체와 진 자를 동시에 고 에서 진 자 PIP 태로 피사체 에 배치,
전 과 같 제
과 시 자들 Comment를 동시에 보 서 중계

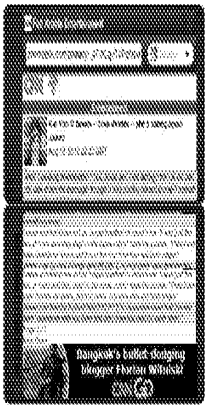


Form 02 | Double creen 180 °



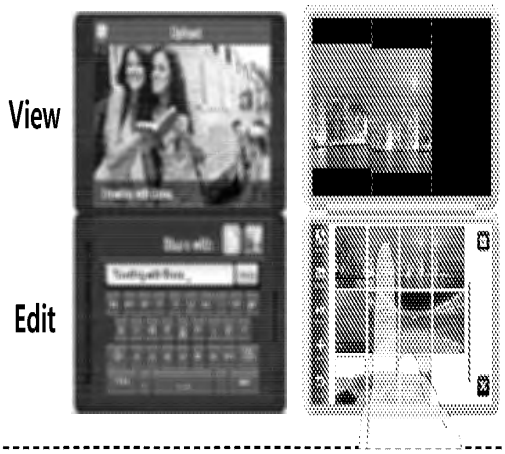
- 2개 Screen 결 여, 기존 Mobile Device에서 제 이 되 던, Display 계를 극복 여, 어진 에서, 적 Activity 수 가
- , 다른 App 동시실 , 나 App 다른 2가지 View 제
- 나 Screen 친구와 유 는 Shared 간으로 가

Expanded Canvas



나 App 두 으로 크게 대 여 표시

Multi-View



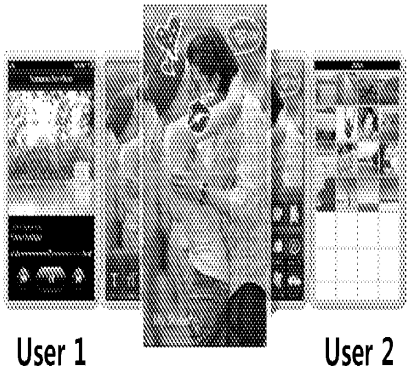
두 에 App 다른 View 제

Multi-Taskin



두 에 서로 다른 App 동시에 실

hared Place



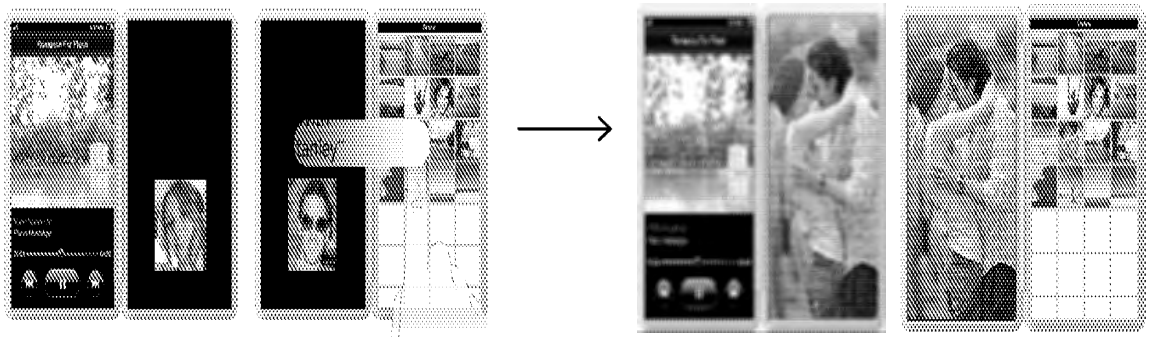
친구와 동작

Form 02 | Double creen 180 °

hared Place

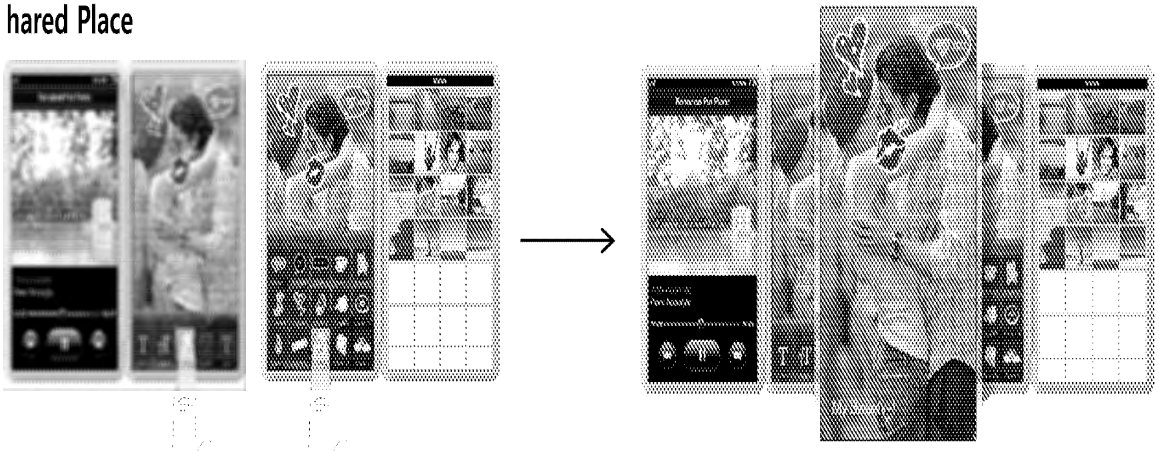
지 과 사진, 메모, 비디오, 유, 그 유, 실시간 유
듀얼 스크린 이 여, Private 과 Sharing 구 여 사

hared Place 츠



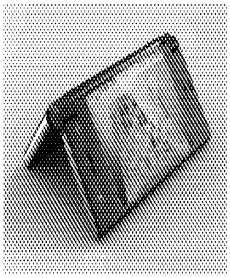
Shared Place에 사진 재 (Drag & Drop) 결된 기기간 Sharing

hared Place



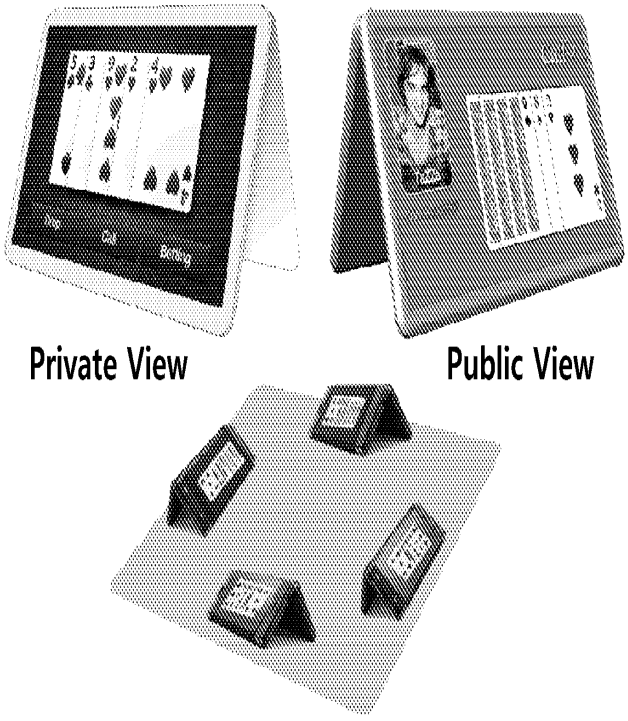
Shared Place에서 자와 아이콘 작 각자 수 작 진 이 실시간으로 유

Form 03 | Out-Folded creen 90°



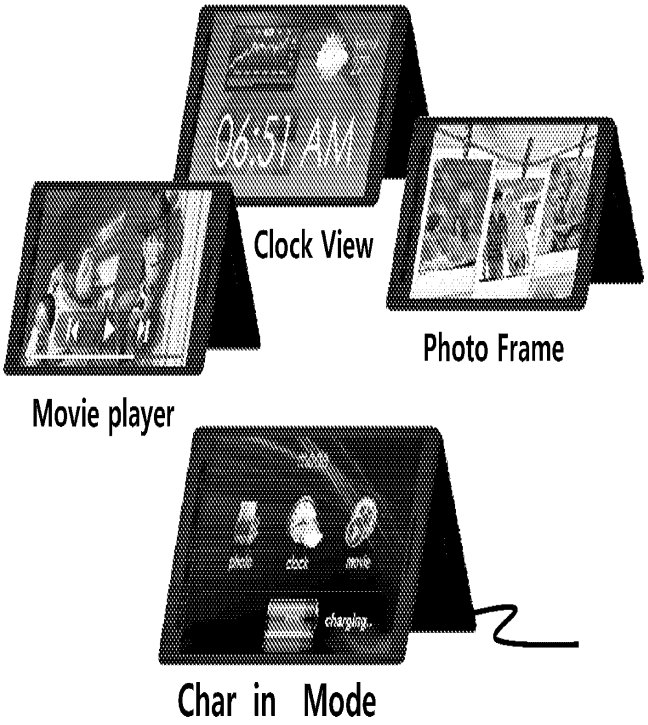
- 쪽 Screen 쳐, 책 에 거치가 가 Standing 태 제
- 절전 , 기본으로 쪽 Screen이 꺼진 태 다가, 에 따라, 쪽 Screen Private, Public View로 나눠 사
- 충전 시, 거치 태에서 시간 컨 츠 이나, 게 에 유

Collaborative Game



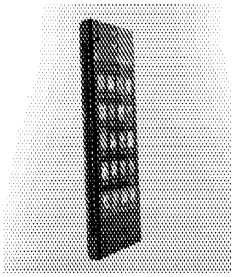
Standing 태에서, 자신이 보는 Private View와 대 에게 보이는 Public View를 설 여, 여럿이 모여 포커게 과 같 동게 즐

Char in Mode / Contents Watchin



충전 시, 거치 태에서 디지털 시계, 자 으로 가 . 개 , 시간 시 는 컨 츠 시 유

Form 04 | One creen 0°



• Screen이 닫 태에서는 두 개 Screen 중 사 자 에 춰 사 기 리 쪽 사 수 도록

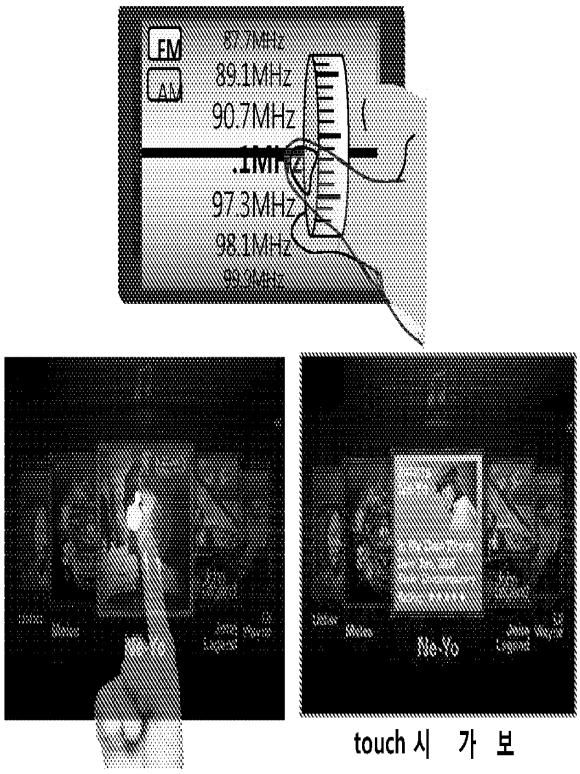
• 에 따라, /뒤 Screen Touch를 동시에 식 여, Touch를 여, 새로 터랙션 제

Auto creen-ON



바닥에 태에서 Call, Notification 이 때, 바닥에 식 여 자동으로 사 가 이 켜 . 사 자가 는 으로 Switching 가 .

Dual-Touch

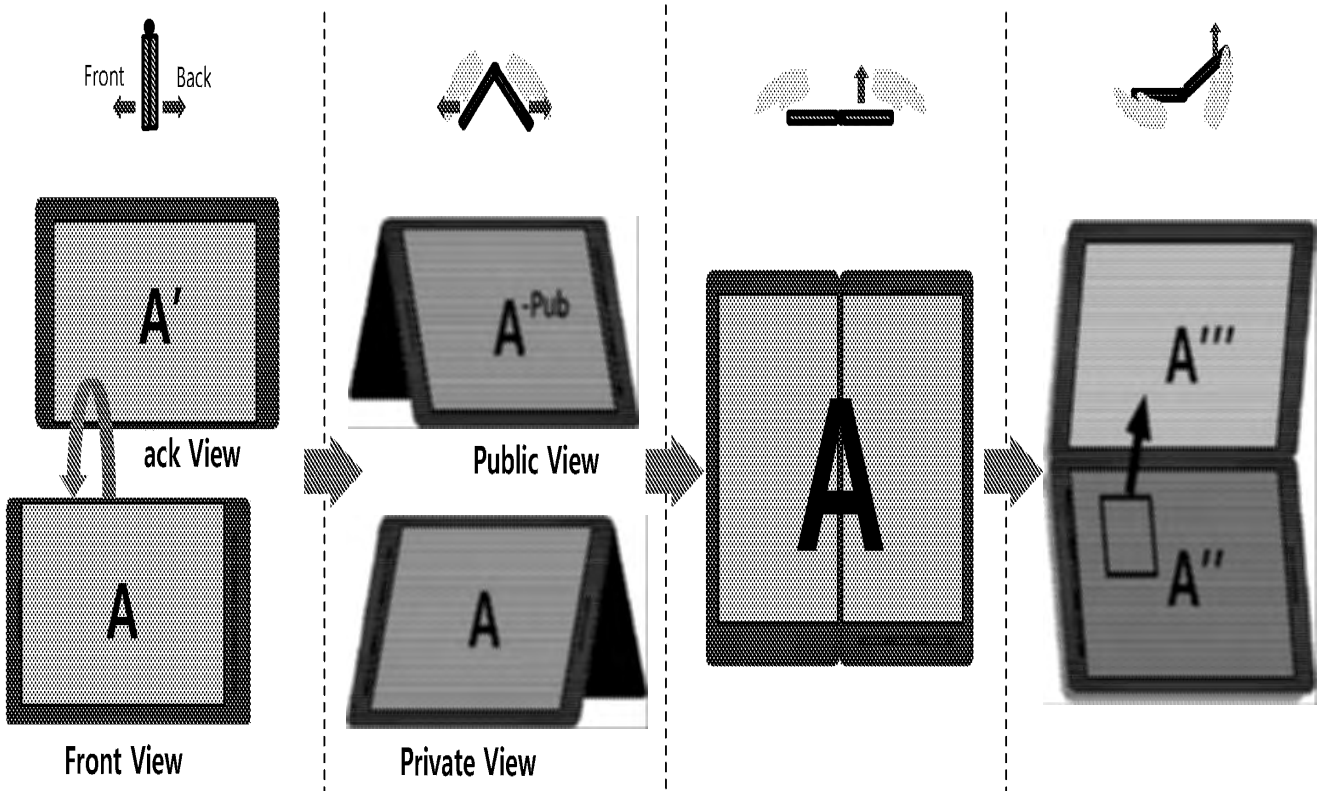


touch 시 가 보

, 뒤 Screen Touch를 동시에 식 여, Touch를 이 , 두께 는 3D-like Touch로 거나, Back Touch로, 지 는 터랙션 제

02 **Interaction Rule** | Folding

나 Application에서 스크린 각도를 달리 때마다, Adaptive 게 Main/Sub 이 구 되고 배치와 된 기 배치 Interaction Rule이 적



LCD 1	LCD 2
A	A'
	OFF

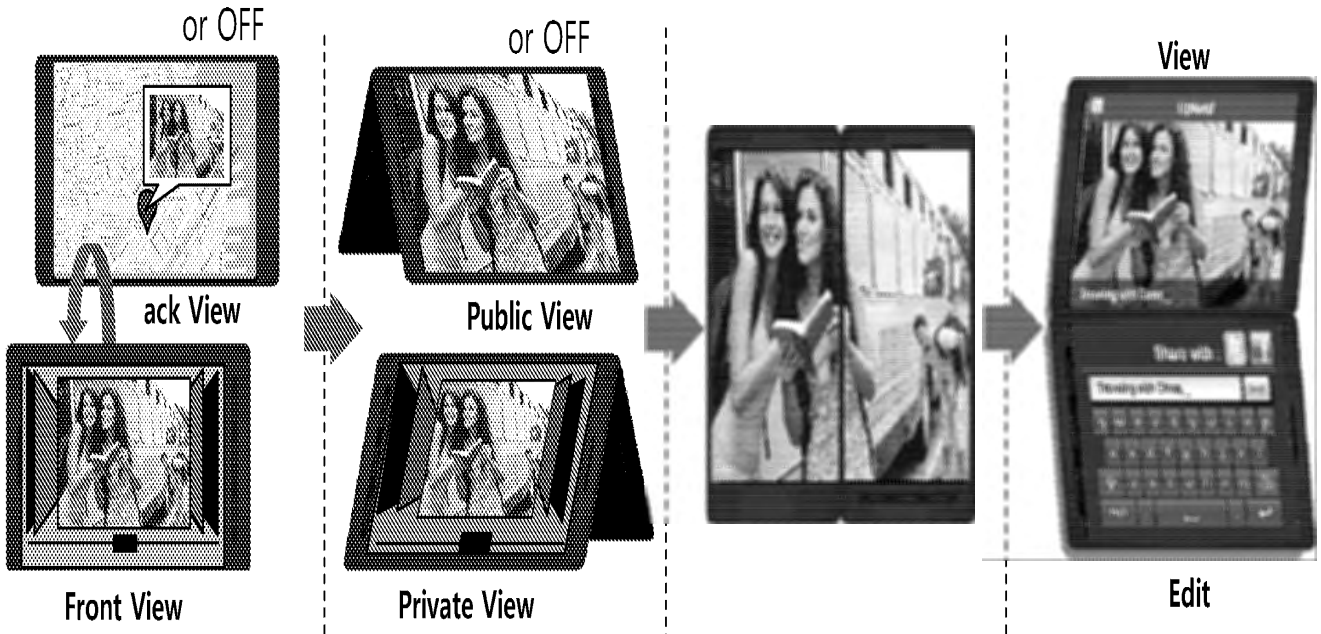
LCD 1	LCD 2
A	A- Pub
	OFF

LCD 1	LCD 2
Expanded A	

LCD 1	LCD 2
A''	A'''

02 **Interaction Rule** | Folding

나 Application에서 스크린 각도를 달리 때마다, Adaptive 게 Main/Sub 이 구 되고 배치와 된 기 배치 Interaction Rule이 적



Front/ ack Mode

단 전 태에서, 에서 사진 List를 Browsing 는 동 , 에서 선택된 사진 Map View 세 보가 표시

Private/Public Mode

단 세 서 거치 고, 내가 바라보는 View에서는 사진 List를 Browsing 고, 다른 사 이 바라보는 View에서는 선택된 사진이 슬라이드 쇼

Expand Mode

스크린 180도로 전 치 , 선택된 사진이 두 스크린에 나로 대되어 보

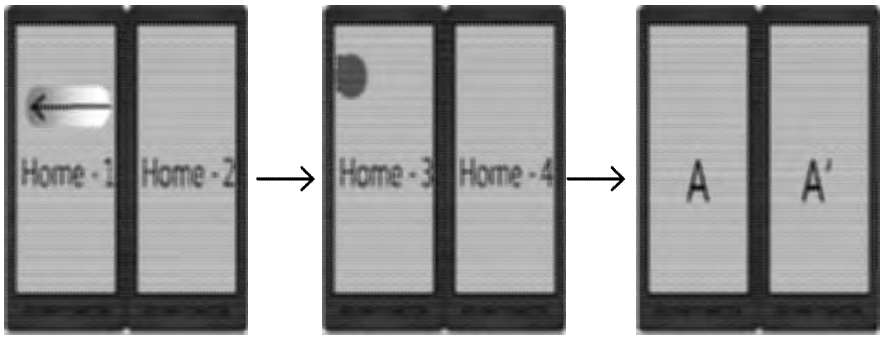
Edit Mode

단 쪽으로 살 으 , 아래쪽 스크린 력 으로 사 고, 결과를 쪽 스크린에 보여주어 손으로 태에서 자 스러 력 태가 가 게

02 **Interaction Rule** | Dual Screen

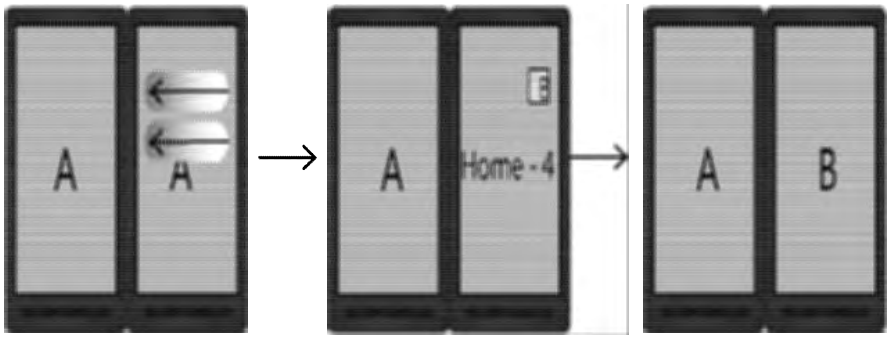
Dual Screen에서는 기본적으로 Dual Screen에 App이 모두 나오도록 다.

Home Interaction



Home Flick 시에 2page 전 Home에서 App 선택 시에 Dual screen 모두 표시

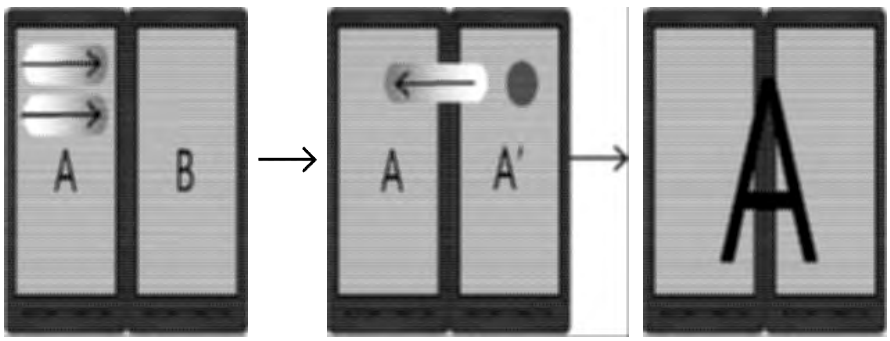
Multi Taskin



2-finger flick 시에 Sing로 전 Sing Home Screen 우 Sing 모드로 표시

---

creen Expand



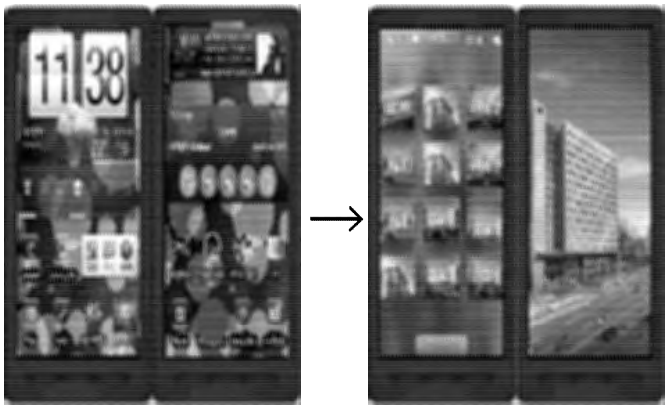
Multi Tasking에서 2-finger flick 시에 Dual Screen으로 전

Dual Screen에서 pinch-Zoom 두 에 걸쳐서 우 이 두 에 걸쳐져서 표기

02 **Interaction Rule** | Dual Screen

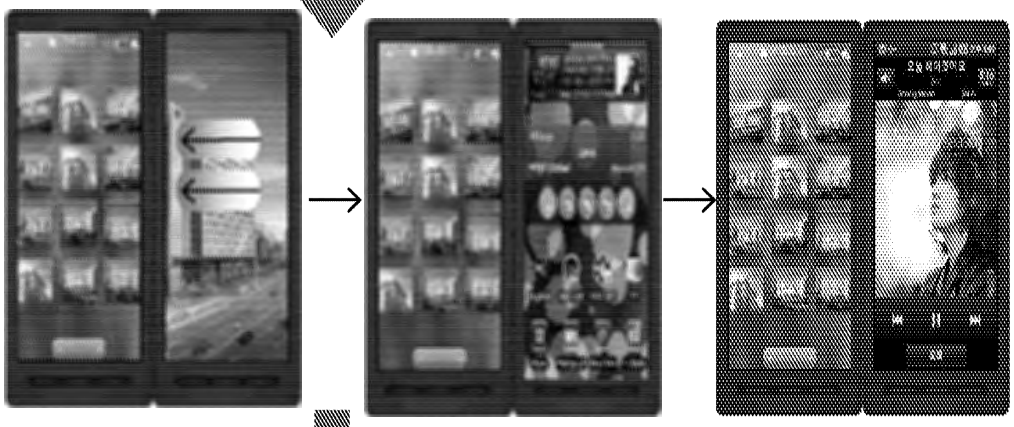
Home Interaction

Home 에서 Photo Gallery를 실
네 과 Preview
이 Dual Display에
표시된다.



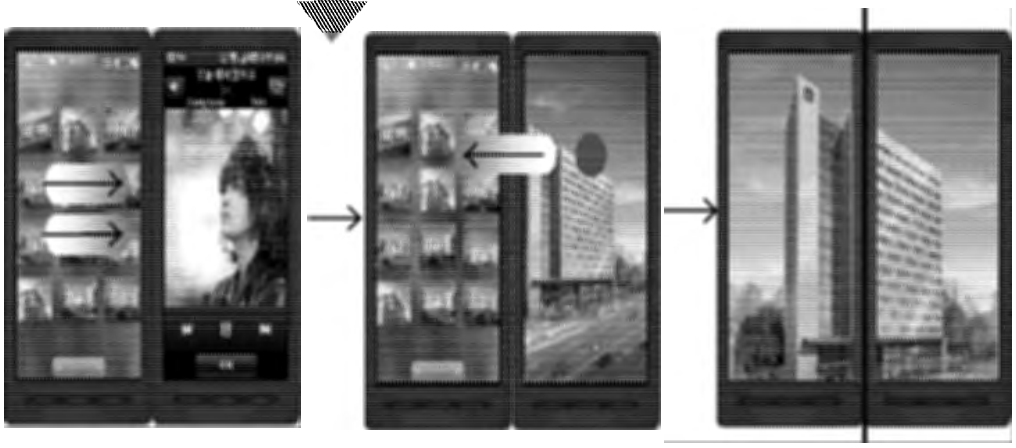
Multi Taskin

Photo Gallery에서 추
가 Home으
로 돌아가서 Music
실 다.



creen Expand

사진, Multi
tasking 중에 사진
Dual Screen에 표시
고 Preview 사진
Pinch-Zoom으로 대
다.



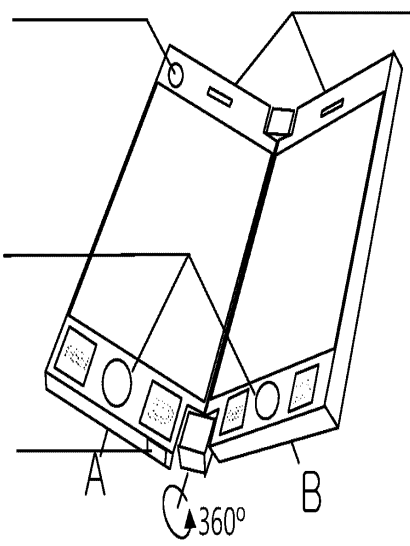
03 PUI Desi n | Dual-Main Concept

과 에 동 PUI를 제 여 사 자가 는 에 이 으로 력.
두 개 Application 각 에서 Control 가 .

8M Camera:
우 Self/배
친 우 Self

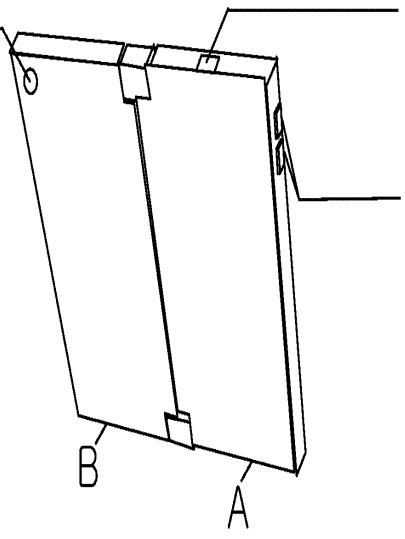
Menu/Home/Back 버튼:
각 에 표시되는 UI에 대
Interaction

MIC :
통 마이크



Speaker:
에 배치 여 어느 으로도
통 가 가

8M Camera:
친 우 사 되는
카메라.
1 시에 배



Hold:
태에 따라 Unlock Display
표시

Volume Up/Down:
A/B 에 계 이 Volume 조절

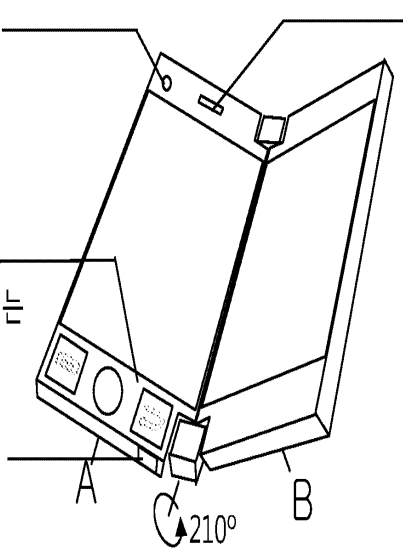
03 PUI Desi n | Main-Sub Concept

력과 련된 모든 버튼 Main에 배치 고,
Sub 력보다 Display 도로 사 다.

8M Camera:
우 Self/배
친 우 Self

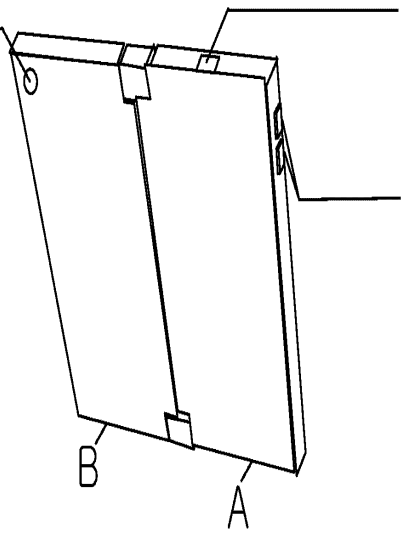
Menu/Home/Back 버튼:
A/B 계 이 에 표시되는
UI에 대 Interaction

MIC :
통 마이크



Speaker:
Main에서 통 가 Main에
버튼 배치

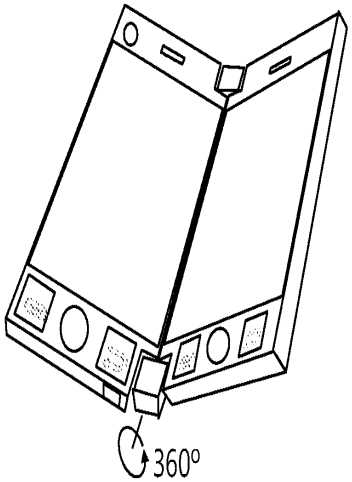
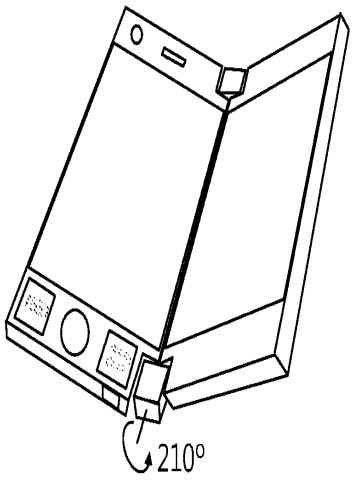
1.4M Camera:
친 우 사 되는
카메라.
1 시에 배



Hold:
태에 따라 Unlock Display
표시

Volume Up/Down:
A/B 에 계 이 Volume 조절

03 PUI Desi n | PUI 비교

Dual-Main Concept		Main- ub Concept
2개 : 에 1개씩	Menu	1개 : Main에 1개
2개 : 에 1개씩	Home	1개 : Main에 1개
2개 : 에 1개씩	ack	1개 : Main에 1개
1개	Hold	1개
1개	Volume Up/Down	1개
2개 : 에 1개씩	peaker	1개 : Main에 1개
8M Pixel 2개 : 에 1개씩 엇갈려 배치	Camera	8M Pixel 1개 : 에 배치 1.4M Pixel 1개 : 에 배치
1개	MIC	1개
360º	도	210º
	PUI 치도	
두 개 사 다 UX		, 슈
, 슈		ub 사 도가 고 다 UX 어려

Appendix

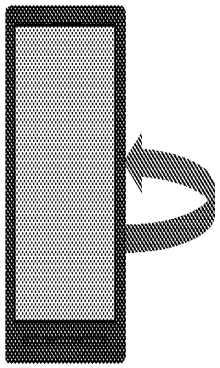
Dual Display UX
Interaction Rule

Concept Development |

Dual Display | Interaction Rule

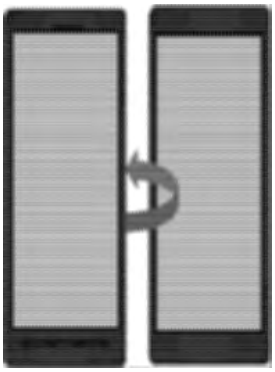
1+1 creen

0°



Flip :
어 사

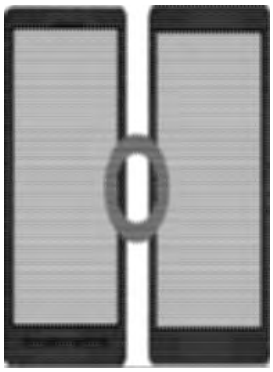
- Home vs 고 App
- Multi-task : App
- App Control/OFF



Front Back

ync :
/ 시 사

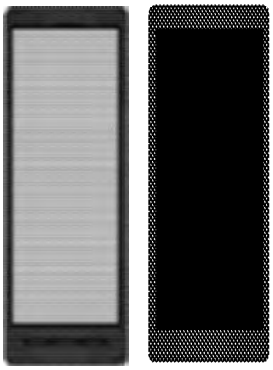
- Double-side Multi-Touch



Front Back

Half :
사

- 땅 올려 았
- 기



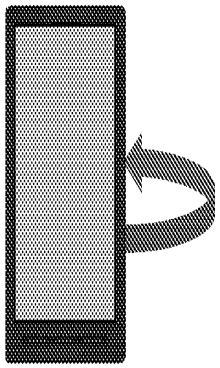
Front Back

Concept Development |

Dual Display | Interaction Rule

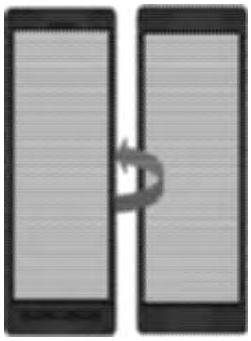
1+1 creen

0°



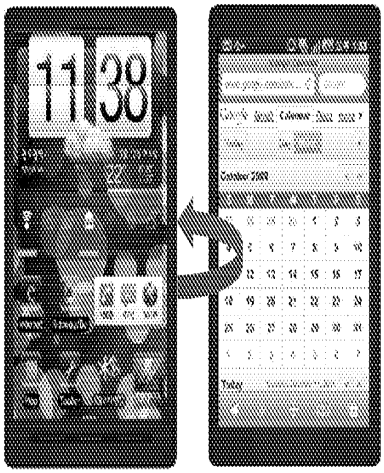
Flip :

어 사



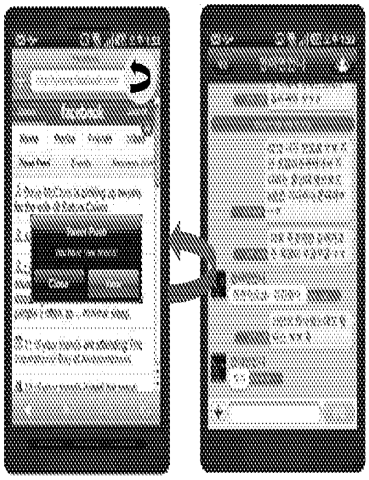
Front Back

Main vs 고 App



Front Back

Multi-Task : App



Front Back

ack View → Notification

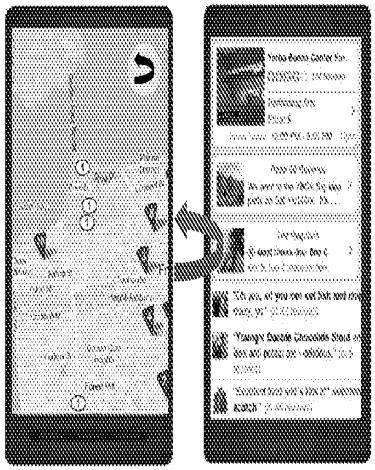
• Notification tack View



Front Back

Double-side View

• 모 vs 모 / 지도 vs 보



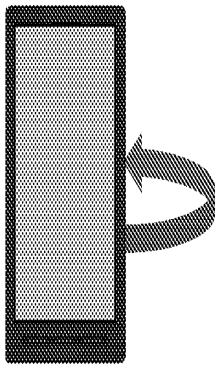
Front Back

Concept Development |

Dual Display | Interaction Rule

1+1 creen

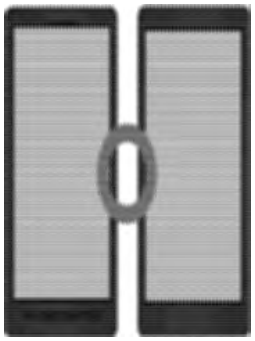
0°



---

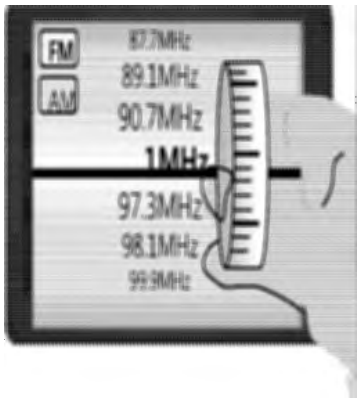
ync :

/ 시 사



Front Back

Dual-Touch



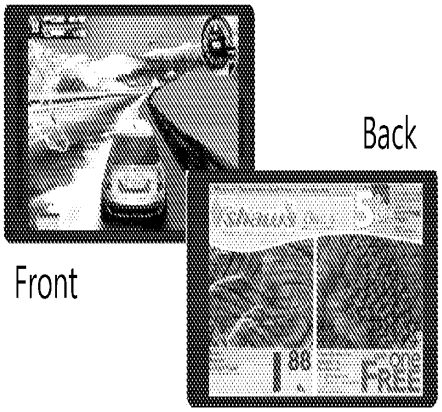


Front-Touch vs ack-Touch

- D-like Input Interaction (Dial)
- ack Touch
- 1-depth + 2-depth
- Zoom In/Out + Fixed Pin

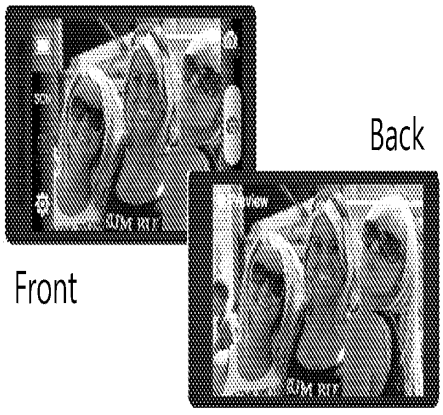
ack View → Personal AD

- Main App vs 지 광고 / 개 광고



Private View vs Public View

- 사 , 구 View 보 주기
- 스크 그대로 보 주기

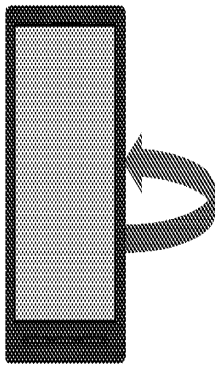


Concept Development |

Dual Display | Interaction Rule

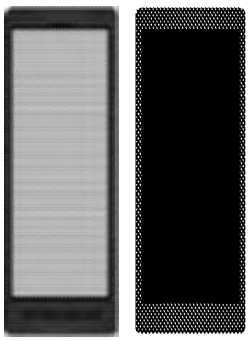
1+1 creen

0°



Half :

사



Front Back

땅 올려 았

• 윗 Alert



윗 바닥



기

• 수 시 반대 자 OFF



Front Back



Concept Development |

Dual Display | Interaction Rule

Double creen

1 0°



Multi-View Mode

어 다 View

• 종속 : Main vs ub

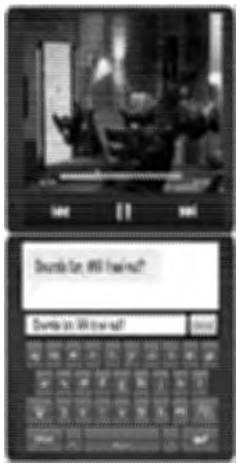


Multi-Task Mode

러 Application

시

• 독 : Multi-taskin



Expand Mode

두 어

• 크게 봐야 어
• 많 봐야 어





Concept Development |

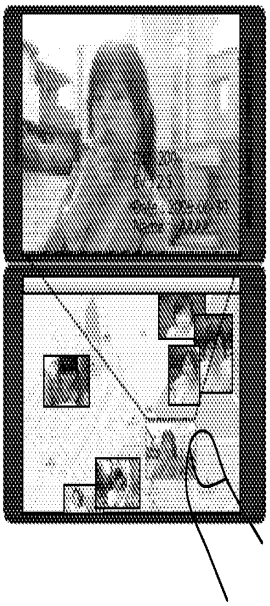
Dual Display | Interaction Rule

Double creen

1 0°



Main vs 대 View



List vs 보



Multi-View Mode

어 다 View



View vs



Concept Development |

Dual Display | Interaction Rule

Double creen

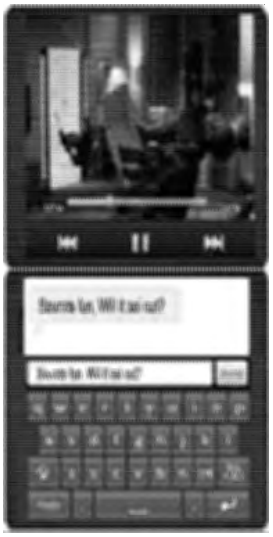
1 0°



어



다 어



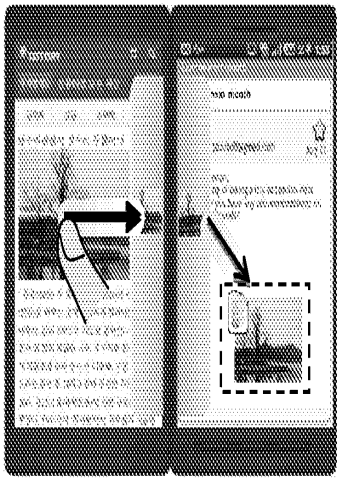
Multi-Task Mode

러 Application

시



Hin e : Clipboard로



Concept Development |

Dual Display | Interaction Rule

Double creen

1 0°



Expand Mode

두 어

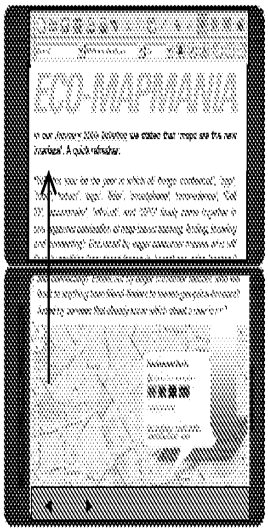


크게 봐야 어





많 봐야 어





Concept Development |

Dual Display | Interaction Rule

Double creen

1 0°



Expanded Mode 서 Layout hortcut

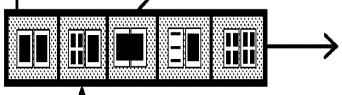






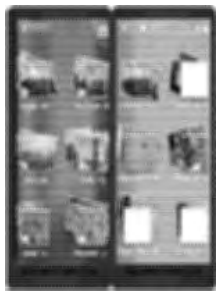
Expanded View

View & View



Thumbnail & View

< hortcut Menu>



All Thumbnail

Multi-taskin 시 지 creen Fix 기

: 어떠 Gesture나 Short cut, Home button 눌러도 app그대로 유지.



오른쪽 에 PIN 꽂고
Home버튼 누르
왼쪽 으로

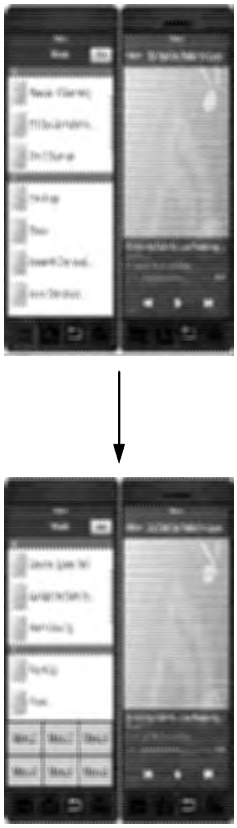


Concept Development |

Dual Display | Interaction Rule

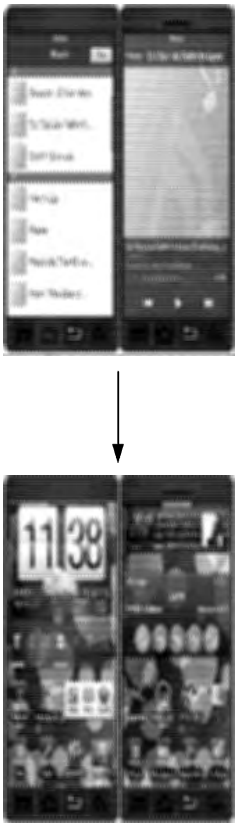
A-A' : 두 개 로 나 Appl. 사 PUI 버

Menu



에 는 Menu 표시

Home



전체 이 Home으로 돌아간다.

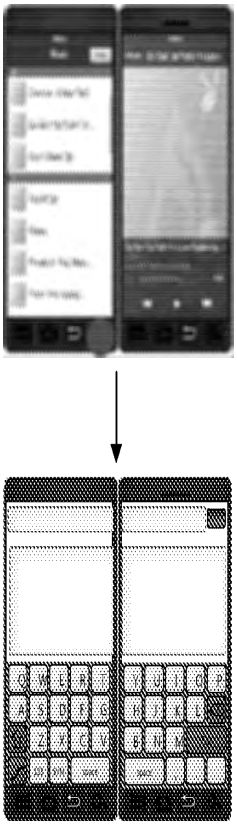
Back





전체 에서 이전 단계로 넘어간다.
단, 1,2 Depth가 표시된 우쪽 모두 Home 으로

Search



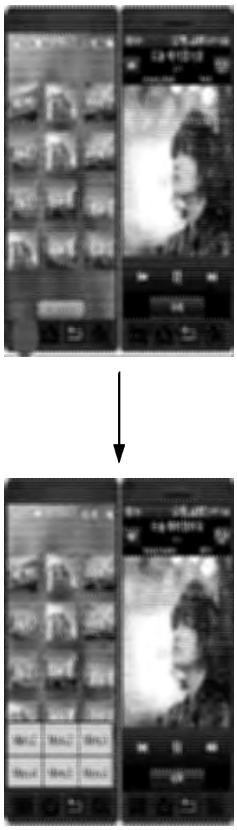
전체 에 Search 표시

Concept Development |

Dual Display | Interaction Rule

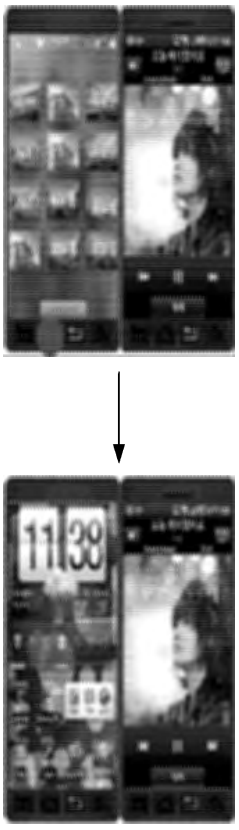
Multi-Taskin : 두 개 로 두 개 Appl. 사 PUI 버

Menu



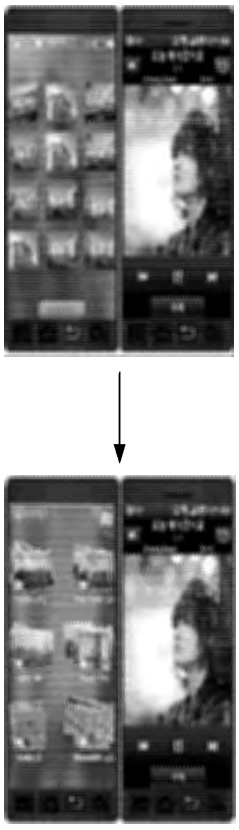
버튼 누른 에 는 Menu 표시

Home



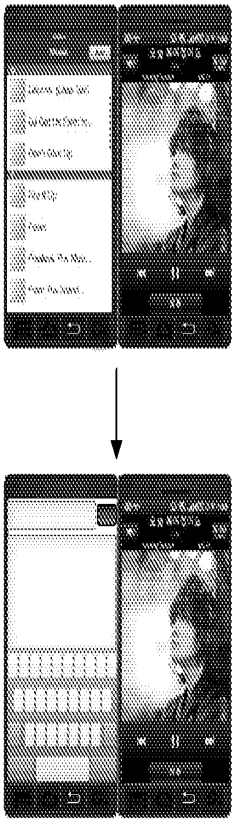
버튼 누른 Appl. 닫고 Home 표시

Back



버튼 누른 Appl. 에 대 서 이전 단계 표시

Search



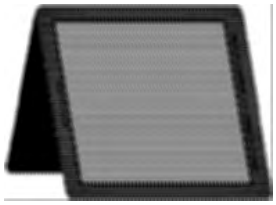
버튼 누른 로 Search 표시

Concept Development |

Dual Display | Interaction Rule

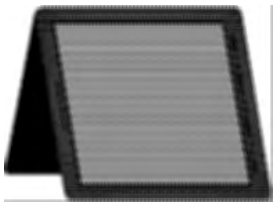
Folded creen

< 1 0° (0°)



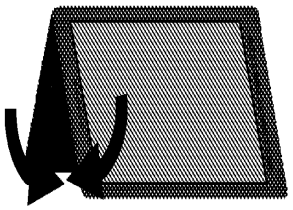
tandin :
고

- tandin Viewer
- Private vs Public
- Facin Each Other
- Gravity Effect



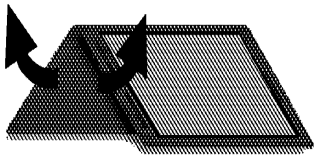
Foldin :
기

- / 치 Reflect
- 들로 나 지기



tretchin :
기

- / 치 Reflect
- 나로 치기

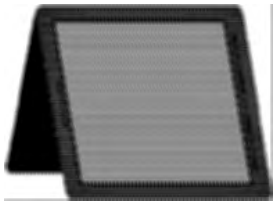


Concept Development |

Dual Display | Interaction Rule

Folded creen

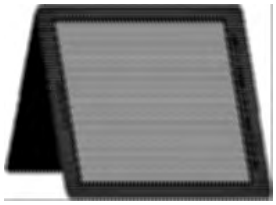
< 1 0° (0°)



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tandin :

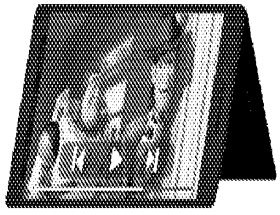
고



tandin Viewer :

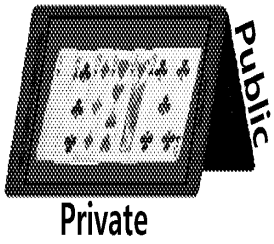
• 자 자, , 시계
• , 개



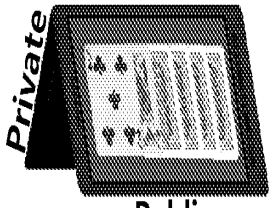


Private vs Public :

• 포커 게 , 1:N Game
• 벨 : 자랑질



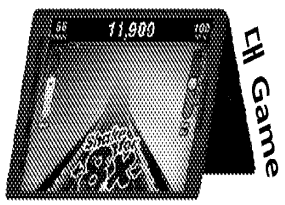
Private



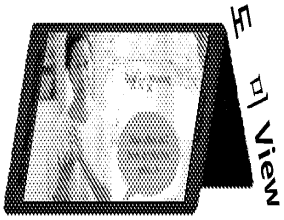
Public

Facin Each Other :

• 2 게
• 애 사소



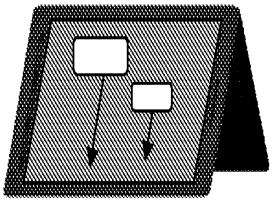
내 Game



애 View

Gravity Effect :

• Object 래로 떨어지려

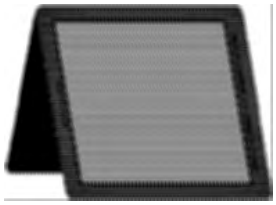


Concept Development |

Dual Display | Interaction Rule

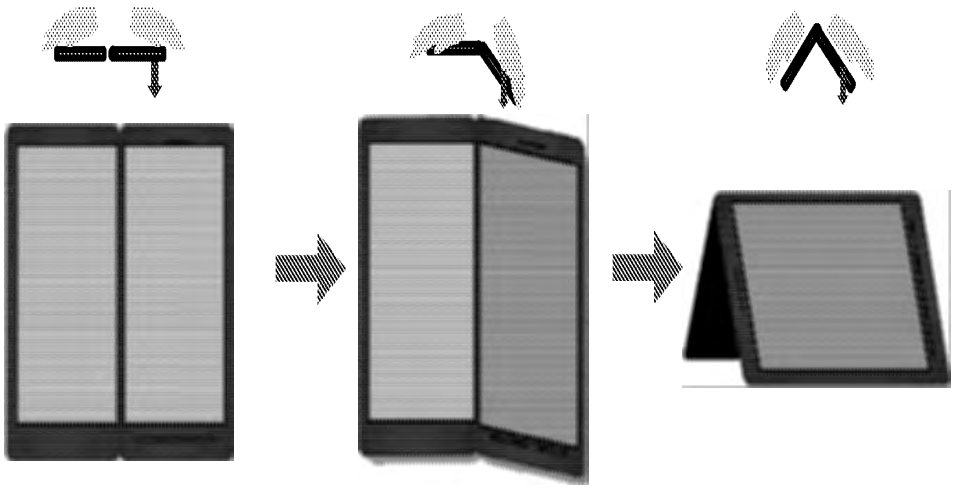
Folded creen

< 1 0°



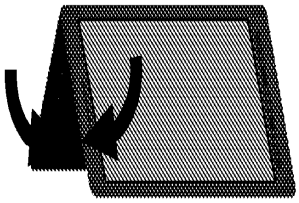
Foldin : 1 0° → 120° (0°)

로 기

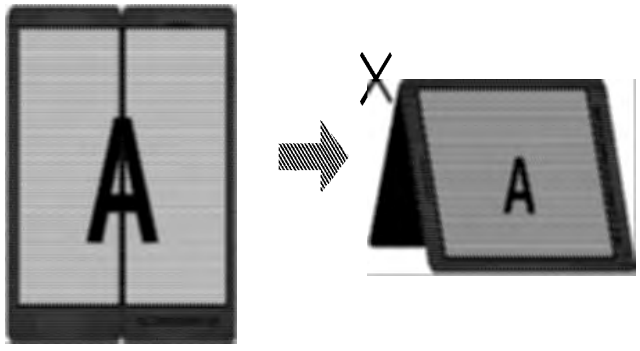


Foldin :

기



- / 치 Reflect
- 둘로 나 지기

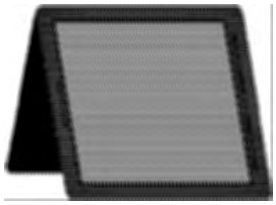


- A++ → A / X
- A++ → A / Home
- A++ → A / App

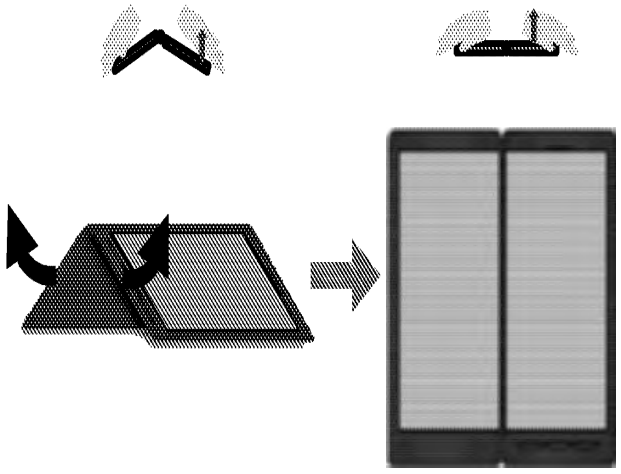
Concept Development |

Dual Display | Interaction Rule

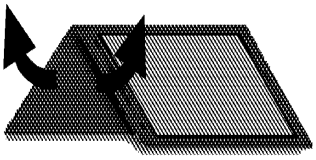
Folded creen
< 1 0°



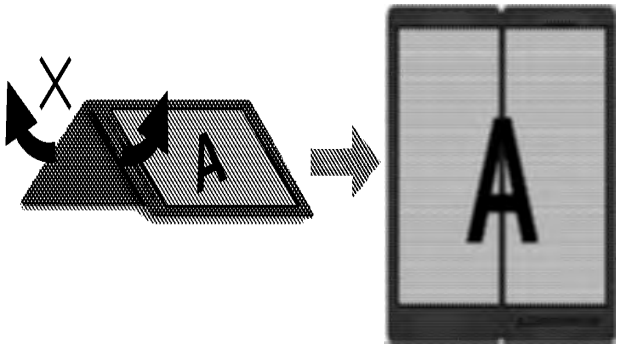
tretchin : 0° (120°) → 1 0°
로 기



tretchin :
기



- **/ 치 Reflect**
- **나로 치기**



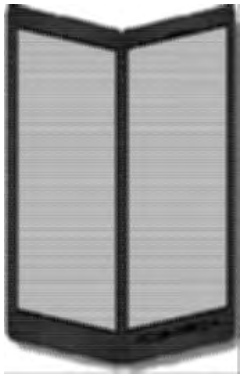
- **A / X → A++**
- **A / Home → A++**
- **A / A′ → A / A′**
- **A / → A /**

Concept Development |

Dual Display | Interaction Rule

Folded creen

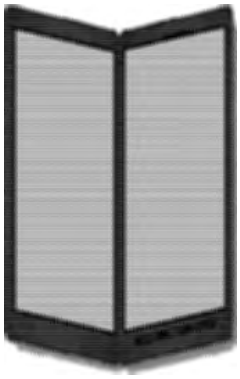
> 1 0° (240°)



tandin :

고

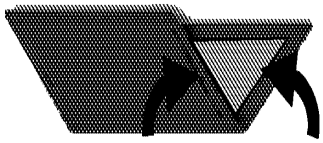
• Double- creen



Foldin :

기

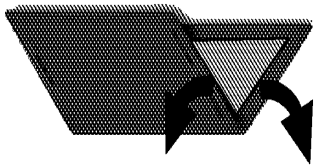
• Zoom In
• Unhide Index



tretchin :

기

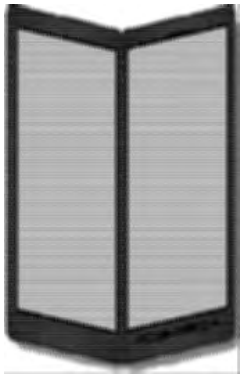
• Zoom Out



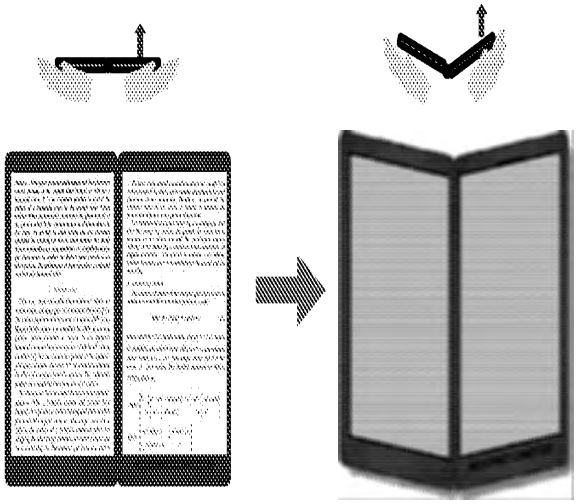
Concept Development |

Dual Display | Interaction Rule

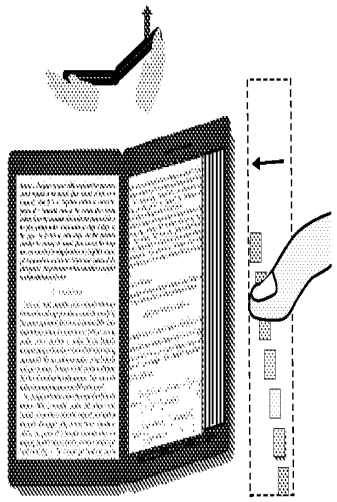
Folded creen
> 1 0°



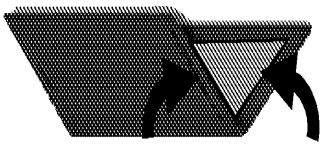
Foldin : 1 0° → 240°
로 기



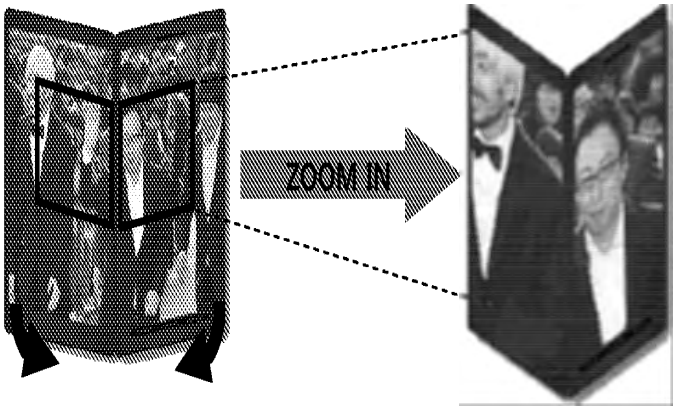
• Unhide Index



Foldin :
기



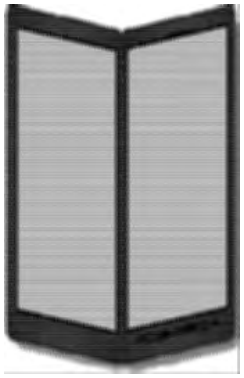
• Zoom In



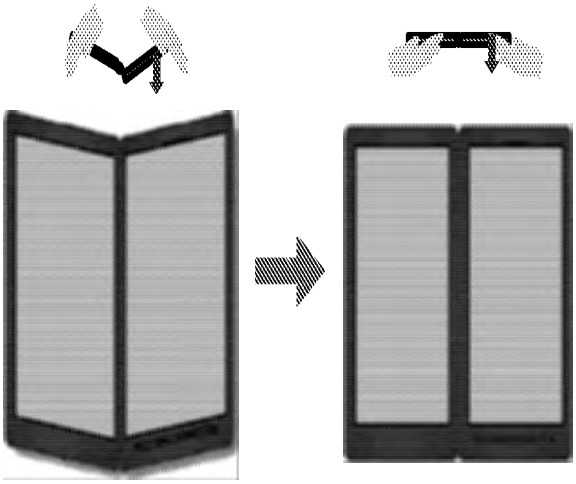
Concept Development |

Dual Display | Interaction Rule

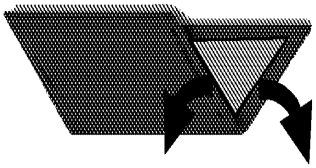
Folded creen
> 1 0°



tretchin : 240° → 1 0°
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tretchin :
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• Zoom Out

