UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION

Petitioner,

v.

EDGE NETWORKING SYSTEMS, LLC,

Patent Owner.

Case No. IPR2025-00619
U.S. Patent No. 10,686,871

BRIEF IN SUPPORT OF PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL

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PATENT OWNER'S EXHIBIT LIST

Ex. 2001	US Patent Publ. No. 2014/0317293 to Shatzkamer
Ex. 2002	McKeown et al, "Open Flow: Enabling Innovation in Campus Networks" March 14, 2008
Ex. 2003	US Patent Publ. No. 2013/0160147 to Draluk
Ex. 2004	US Patent Publ. No. 2004/0237081 to Homiller
Ex. 2005	*Ruckus Wireless, Inc. v. Hera Wireless SA et al.*, IPR2018-01739, Petition for Inter Partes Review, Paper 1
Ex. 2006	US Patent No. 10,496,387
Ex. 2007	Office Action dated April 3, 2019 issued during prosecution of US Patent No. 10,496,387 together with Notice of References cited accompanying same

I. INTRODUCTION

Pursuant to the Memorandum by the Acting Director dated March 26, 2025, setting forth the "Interim Processes for PTAB Workload Management" (the Memorandum), the Patent Owner hereby sets forth the applicable bases for discretionary denial of institution. This filing is being made within two months of the Notice of Filing Date Accorded To Petition (Paper #5). As explained more fully below, the *Advanced Bionics* framework and *Becton Dickinson* factors, as well as several additional factors, favor the discretionary denial of institution.

The Petitioner advances a combination of prior art that is, at best, cumulative of the art applied during prosecution. With respect to the claim limitation requiring a programmable network device "powered by *a sandboxing operating system*" -- which was critical to patentability -- the Petition relies on the Vasell reference which is cumulative of the Shatzkamer reference applied during prosecution. Simply put, discretionary denial under *Advanced Bionics* and *Becton Dickinson* is warranted, because the prior art relied on in the Petition is, at best, cumulative of the art applied during prosecution, and the Petition does not allege (let alone demonstrate) that the Office erred in allowing the application over such art.

The Petitioner's gamesmanship also favors discretionary denial. Petitioner maintains in the district court that the claimed "sandboxing operating system" is software that, *inter alia*, "contains a *kernel*." Ex. 1071, 7-8 (emphasis added).

However, without any explanation for doing so, the Petitioner abandons its district court position here by attempting to map the claimed "sandboxing operating system" to Vasell, which, like the Petition, makes *no mention of a kernel*. In another example of gamesmanship, the Petitioner contends in the district court that the term "powered by" in claim 1 is indefinite because the term "*has no meaning to a POSITA* from a technical perspective." Ex. 1071, 14 (emphasis added). By contrast, in this IPR, Petitioner contends that each claim term (including "powered by") can and should "*be given its plain and ordinary meaning*" as understood by a POSITA. Pet., 12; Ex. 1003, ¶36. A party claiming in one forum that a claim term has "no meaning to a POSITA" should not be permitted to simultaneously argue in another forum that the same term "be given its plain and ordinary meaning" as understood by a POSITA. The fact that the Petitioner is engaging in this type of gamesmanship provides a further basis for discretionary denial.

Beyond such gamesmanship, the Petition attempts to pass off a fabricated version of Figure 2 of Vasell for the actual figure from the reference. The Petition performs this sleight of hand not once, not twice - but *three times*. Pet., 20, 29 and 47. In addition, the Petition's extensive reliance on a voluminous *291-page* expert declaration (Ex. 1003) comprising 581 paragraphs for filling gaps in the prior art favors discretionary denial. Finally, Petitioner's longstanding knowledge of Patent Owner's rights and failure to seek early review favor discretionary denial.

For all of these reasons, and as explained more fully below, the Director should exercise her discretion to deny institution.

II. DISCRETIONARY DENIAL IS APPROPRIATE UNDER THE *ADVANCED BIONICS* FRAMEWORK AND THE *BECTON DICKINSON* FACTORS

The Petition challenges U.S. Patent No. 10,686,871 (the '871 Patent) based on a combination of prior art that is, at best, cumulative of the art that the Examiner applied during prosecution of the parent of the '095 Patent, i.e., U.S. Patent No. 9,843,624 (the '624 Patent). Just prior to allowance, the Examiner of the '624 Patent maintained that the art being applied met the pending claims. Allowance of the '624 Patent was subsequently based on an Examiner's amendment requiring that the programmable network device previously recited in the claims be narrowed to a programmable network device "powered by *a sandboxing operating system*." The claims of the '871 Patent substantially track those of the '624 Patent, and carry forward the requirement of a programmable network device "powered by *a sandboxing operating system*" that was critical to patentability. With respect to this particular limitation, the reference advanced in the Petition is cumulative of the reference that the Examiner applied and correctly found wanting.

During the prosecution of the '624 Patent, the Examiner rejected the claims over a combination of multiple references which are discussed in detail below. One of those references -- U.S. Patent Publ. No. 2014/0317293 to Shatzkamer

(Shatzkamer) (Ex. 2001) -- disclosed a "*virtualized* application *runtime environment*" for running network applications. However, the Examiner recognized that Shatzkamer failed to implement isolation of applications at the "*operating system*" level. In view of this deficiency, the Examiner introduced (by way of an Examiner's Amendment) into the claims a further requirement that the programmable network device be "powered by *a sandboxing operating system*." In the Examiner's reasons for allowance of the '624 Patent, the Examiner expressly found that this aspect of the claims was absent from Shatzkamer. As discussed more fully below, with respect to the requirement that the programmable network device be "powered by *a sandboxing operating system*," the reference advanced in the Petition (Vasell) is cumulative of the Shatzkamer reference that the Examiner correctly found wanting.

When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation. *Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 980 (Fed. Cir. 1999). Here, the '871 Patent and the '624 Patent derive from the same application, because the '871 Patent is a continuation of the '624 Patent. Thus, the prosecution history regarding a claim limitation in the '624 Patent (i.e., the limitation reciting "*a*

sandboxing operating system”) applies with equal force to the subsequently issued ‘871 Patent because, as explained below, both patents contain the same limitation.

As demonstrated in detail below, the claims of the ‘871 Patent substantially track those of the ‘624 Patent. Among other similarities, the claims of the ‘871 Patent carry forward from the ‘624 Patent the requirement of a programmable network device “powered by *a sandboxing operating system*.” The similarities between the claims of the ‘624 Patent and ‘871 Patent are underscored by the prosecution of the ‘871 Patent, which included an obviousness-type double-patenting rejection over the ‘624 Patent.

The Petition advances a combination of prior art that is, at best, cumulative of the art that the Examiner applied during the prosecution of the ‘624 Patent. Most importantly, with respect to the limitation upon which allowance was based -- i.e., the requirement of a programmable network device “powered by *a sandboxing operating system*” -- the Vasell reference advanced in the Petition is cumulative of the Shatzkamer reference applied during prosecution. As a result, and as explained more fully below, the *Becton Dickinson* factors favor discretionary denial because the prior art relied on in the Petition is, at best, cumulative of the art applied by the Examiner, and the Office did not err in allowing the application over that prior art during prosecution.

A. Prosecution History of '624 Patent

1. Rejection Of Claims Submitted With Request For Continued Examination

The application that matured into the '624 Patent was filed on June 4, 2014. Ex. 1005, 2. Following two earlier rejections (Ex. 1005, 151-176, 242-273), the Applicant filed a Request for Continued Examination, which included, *inter alia*, claims 1, 7, 17 and 18 set forth below:

> 1. (Currently Amended) A system ~~comprising~~ for processing data packets in a mobile data network that includes a base station coupled to a core network having a plurality of network elements, said network elements comprising:
>
> a programmable network device adapted to host a plurality of first network applications;
>
> a programmable cloud device adapted to host a plurality of second network applications, wherein the plurality of first network applications in the programmable network device and the plurality of second network applications in the programmable cloud device are in secure communication with each other to form distributed applications; ~~and~~
>
> the programmable network device and programmable cloud device forming unified capabilities enabling a plurality of upper layer application programming interfaces (APIs) that allow for ~~simultaneous~~ programming of the programmable network device and programmable cloud device independent of the programmable network device ~~hardware~~ and the programmable cloud device ~~hardware~~;
>
> an infrastructure application market place in communication with an application management portal coupled to the programmable network device and programmable cloud device, said infrastructure market place capable of providing tested and certified distributed applications to the application management portal for installation in the first network applications and second network applications and allow the application management portal to manage life cycles of the distributed applications; and

> wherein the application management portal is further capable of live upgrading of the distributed applications with substantially no interruption to operation.
>
> 7. (Previously Presented) The system of claim 1, wherein the programmable network device is an LTE eNB and the programmable cloud device hosts an LTE core network functions in separate virtual machines from the group consisting of: MME, S-GW, and P-GW.
>
> 17. (Previously Presented) The system of claim 1, wherein the at least one of the plurality of first network applications and at least one of the plurality of second network applications are given an access level to determine which APls can be accessed.
>
> 18. (Currently Amended) The system of claim 1, wherein the ~~at least one~~ programmable network device ~~and programmable cloud device are~~ is adapted to verify the authenticity and integrity of updates to the first network applications and the programmable cloud device is adapted to verify the authenticity and integrity of updates to the second network applications.

Ex. 1005, 303-307.

The Examiner responded to the Request for Continued Examination by rejecting all of the pending claims over prior art. With respect to pending claims 1, 7, 17 and 18 set forth above, the Examiner applied combinations of six references including Li (Ex. 1005, 371-376), the OpenFlow white paper (Ex. 2002), Shatzkamer (Ex. 2001), the NFV white paper (Ex. 1005, 377-392), Draluk (Ex. 2003) and Homiller (Ex. 2004). Ex. 1005, 321-344. Before getting into the details of how these references mapped to the claims, the Examiner stated:

> In response to Applicant's patentability claim, the Examiner respectfully disagrees noting that most of the claimed features are

> already available in well-known industry standards such as Software Defined Networking (SDN), OpenFlow Protocol, and Network Function Virtualization (NFV). SDN, OpenFlow and NFV are already geared towards hardware-independent implementation, in-service ("hot") software upgrade, and secure communications between entities. Further, Shatzkamer et al (2014/0317293) discloses an app-store portal for providing interdependent virtualized network functions for different types of services (distributed applications), such as an Evolved Packet service [0031]. Similarly, Li et al ("Toward Software Defined Cellular Networks") discloses using SDN to simplify design and management of cellular data networks. Also, the idea of distributed management and control is not new to LTE, where the functions of a radio network controller are distributed between the radio base stations (eNodeB) and the access gateways in the core (SGW, PGW, MME, etc.). Therefore, *it is not clear what the novel and inventive features of this Application are*. Ex. 1005, 323 (emphasis in original).

Following this overview, the Examiner presented his view of how the claims mapped to the prior art.[1] With respect to claims 1, 17 and 18 (set forth above), the chart below sets forth the prior art mappings from the rejection:

Elements from Claim 1	Examiner's Mapping To Prior Art
A system for processing data packets in a mobile data network that includes a base station coupled to a core network having a plurality of network elements, said network elements comprising:	"Li discloses the method of processing data packets in a mobile data network that includes a base station coupled to a core network *(In LTE, the user equipment UE connects to a base station (eNodeB), which directs traffic through a serving gateway S-GW which tunnels the traffic to a packet gateway P-GW which in turn connects the traffic to the internet. ...)*"

[1] Patent Owner does not concede that the Examiner's mappings set forth herein, or the Examiner's rationale for combining references, are correct.

	Ex. 1005, 327 (mapping corresponding feature in independent claim 22 to Li) and 332 (applying same analysis to claim 1).
a programmable network device adapted to host a plurality of first network a applications; a programmable cloud device adapted to host a plurality of second network applications,	Li discloses that "Cellular data networks are ripe for the introduction of Software Defined Networking (SDN), where the network equipment performs basic packet-processing functions (i.e. first network applications hosted by network device) at the behest of applications running on a logically-centralized controller (i.e. second network applications hosted by cloud device, such that network equipment and the controller provide distributed service to process cellular data traffic) [page 2]; using a programmable control plane and a programmable data plane [page 5, last paragraph]. " *Id*., 328 (mapping corresponding features in independent claim 22 to Li) and 332 (applying same analysis to claim 1).
wherein the plurality of first network applications in the programmable network device and the plurality of second network applications in the programmable cloud device are in secure communication with each other to form distributed applications;	"OpenFlow discloses that the applications in the network devices are in secure communication with the applications in the cloud devices (a secure channel that connects the OpenFlow switch to the remote control process in the controller [page 2 last paragraph])." *Id*., 331 (mapping corresponding "secure communication" feature in claim 23 to Openflow) and 332 (applying same analysis to claim 1). Li discloses that "instead of a centralized controller, the control functionality may be distributed to the switches or base stations, where each switch can run an agent that performs simple control functions, thereby partitioning control functionality between the controller and the agent (i.e. distributed applications) [page 4, column 2])."

	Id., 328 (mapping corresponding "distributed applications" feature in independent claim 22 to Li) and 332 (applying same analysis to claim 1).
the programmable network device and programmable cloud device forming unified capabilities enabling a plurality of upper layer application programming interfaces (APIs) that allow for programming of the programmable network device and programmable cloud device independent of the programmable network device and the programmable cloud device;	Li discloses "*remote control of virtualized base station resources using open API between the controller and base station [page 2, column 2]; OpenFlow switches can be used as base stations, that can be controlled using the OpenFlow protocol (i.e. upper layer API) [page 4 last paragraph]; SDN radio hardware exposes a well-defined API which can be controlled by the control plane [page 5, column 1, last paragraph]; vendor-specific configuration interfaces can be overcome using SDN (i.e. virtualization, implementing network functions in software (SDN) and using "open" APIs (OpenFlow), all enable hardware-independent control) [page 2, first paragraph]*. ... [T]the OpenFlow white paper discloses an example where "AmyOSPF" is a new routing protocol, AmyOSPF or any other custom routing protocol can be run in the controller (i.e. controller device programmed with AmyOSPF), and the controller adds flow-entries in the OpenFlow switches to perform the data-plane packet processing [page 4, column 1]. Therefore, it would have been obvious to a person of ordinary skill in the art, before the effective filing date of the claimed invention, to include "programming of the cloud device", as taught by OpenFlow, in order to include the details of an exemplary OpenFlow implementation in the generic SDN discussion of Li." *Id*., 328-329 (mapping corresponding features in independent claim 22 to Li and OpenFlow) and 332 (applying same analysis to claim 1).
an infrastructure applic-ation market place in	"[A]nalogous art by Shatzkamer discloses app store portal for deploying virtualized network functions

communication with an application management portal coupled to the programmable network device and programmable cloud device, said infrastructure market place capable of providing tested and certified distributed applications to the application management portal for installation in the first network applications and second network applications and allow the application management portal to manage life cycles of the distributed applications;	[Title]; support Network Function Virtualization (NFV) [0005] by providing a digital distribution platform or an "app store" (i.e. marketplace) for deployment of virtual network functions (VNFs) [0019], vendors or third-party developers communicate with the app store to submit VNFs according to prescribed certification requirements [0020]; provide a standardized web based application portal (i.e. application management portal) that can provide point-and-click deployment of the third-party VNFs [0021]. Provide a coordinated execution of virtualized network services by an by an orchestrator [0023]; the orchestrator includes a service provisioning module and a life-cycle management controller [0028]; for example, for a new evolved packet service (EPS), the orchestrator can allocate a virtualized eNodeB, a virtualized MME, a virtualized SGW, a virtualized PGW, etc. [0031]. Therefore, it would have been obvious to a person of ordinary skill in the art, before the effective filing date of the claimed invention, to modify the software defined cellular network of Li that utilizes the OpenFlow protocol (Li-OpenFlow), to include an application marketplace and an application management portal as taught by Shatzkamer, because a standardized web-based app store portal enables a "point-and-click" deployment of third-party virtual network functions, thereby automating the complex tasks of commissioning, capacity planning and management of virtualized network services [Shatzkamer 0001, 0004]." *Id*., 330 (mapping corresponding features in independent claim 22 to Li, OpenFlow and Shatzkamer) and 332 (applying same analysis to claim 1).
wherein the application management portal is	"[T]he underlying NFV white paper discloses that one of the benefits of NFV is to support in-service

further capable of live upgrading of the distributed applications with substantially no interruption to operation.	software upgrade, without interrupting service [NFV, page 9]. Therefore, it would have been obvious to a person of ordinary skill in the art, before the effective filing date of the claimed invention, to modify the combined disclosure of Li-OpenFlow-Shatzkamer to include "upgrade the distributed applications with substantially no interruption to operation" as recited in NFV white paper, in order to include a recitation of the benefits of the NFV paradigm that is used in Shatzkamer." *Id*., 331 (mapping corresponding features in independent claim 22 to Li, OpenFlow, Shatzkamer and NFV whitepaper) and 332 (applying same analysis to claim 1).

Elements from Claim 17	Examiner's Mapping To Prior Art
The system of claim 1, wherein the at least one of the plurality of first network applications and at least one of the plurality of second network applications are given an access level to determine which APls can be accessed.	"Draluk discloses software platforms provide application programming interfaces (APls) to allow interaction between developer level processes and platform level processes. It is desirable to provide different levels of access to these APls, for example, some trusted applications may be permitted access to a full set of APls while other third party applications may be permitted access to a limited set of APls [0002]. Therefore, it would have been obvious to a person of ordinary skill in the art, before the effective filing date of the claimed invention, to modify Li-OpenFlow-Shatzkamer-NFV to include "wherein the at least one of the plurality of first network applications and at least one of the plurality of second network applications are given an access level to determine which APls can be accessed" as taught by Draluk in order to prevent misuse of protected data by untrusted applications [Draluk, 0015]." *Id*., 343.

Elements from Claim 18	Examiner's Mapping To Prior Art
The system of claim 1, wherein the programmable network device is adapted to verify the authenticity and integrity of updates to the first network applications and the programmable cloud device is adapted to verify the authenticity and integrity of updates to the second network applications.	"Homiller discloses at Block 406, the integrity of the software upgrade package may be verified, and at Block 406, the authenticity of the software upgrade package may be verified [0036, Fig. 4]. Therefore, it would have been obvious to a person of ordinary skill in the art, before the effective filing date of the claimed invention, to modify Li-OpenFlow-Shatzkamer-NFV to include verifying authenticity and integrity of deployed applications as taught by Homiller in order to check the upgrade package for errors, and to prevent the use of a software upgrade package that is intended for a different type of device, or prevent the use of software that has been developed, or modified, by a non-authorized individual or entity [Homiller, 0036]." *Id*., 344.

2. First Examiner Interview and Response To Rejection

After the rejection, the Applicant conducted an interview with the Examiner to discuss the prior art applied in the rejection. *Id*., 405-406. During the interview, the Applicant presented an amended version of claim 1 to the Examiner, but no agreement was reached. *Id*., 409-410. After the interview, the Applicant filed a response which included an amended version of claim 1 which is set forth below in color-coded format. With one exception (discussed below) which turned out to be immaterial to the Examiner's decision to allow the case, each proposed amendment to claim 1 was substantially directed to *previously rejected subject matter* in that each such amendment either (i) *rearranged* within claim 1 *similar limitations from*

the previously rejected version of the claim, or (ii) incorporated limitations from the *previously rejected versions of dependent claims 17 and 18* into claim 1:

> 1. (Currently Amended) A system for processing data packets in a mobile data network that includes a base station coupled to a core network having a plurality of network elements, said plurality of network elements comprising:
>
> a programmable network device ~~adapted~~ configured to host a plurality of first network applications and located at the wireless edge of the mobile data network;
>
> a programmable cloud device ~~adapted~~ configured to host a plurality of second network applications and located at a backend location which allows for control of the first and second network applications across the mobile data network, wherein the plurality of first network applications in the programmable network device and the plurality of second network applications in the programmable cloud device are in secure communication with each other to form distributed applications;
>
> the programmable network device and programmable cloud device forming unified capabilities enabling a plurality of ~~upper layer~~ application programming interfaces (APIs) that allow for programming of the programmable network device and programmable cloud device independent of the programmable network device and the programmable cloud device, wherein the at least one of the plurality of first network applications and at least one of the plurality of second network applications are given an access level to determine which APIs can be accessed;
>
> an application management portal coupled to the programmable network device and programmable cloud device, wherein the application management portal is coupled to an application repository which is capable of providing the distributed applications which have been tested and certified to the application management portal for installation in the programmable network device and programmable cloud device;
>
> wherein the application management portal is further configured to manage life cycle of the distributed applications, and conduct live upgrades of the distributed applications with substantially no interruption to operation; and
>
> wherein the programmable network device is adapted to verify the authenticity and integrity of upgrades to the first network applications and the programmable cloud device is adapted to verify the authenticity and integrity of upgrades to the second network applications

~~an infrastructure application market place in communication with an application management portal coupled to the programmable network device and programmable cloud device, said infrastructure market place capable of providing tested and certified distributed applications to the application management portal for installation in the first network applications and second network applications and allow the application management portal to manage life cycles of the distributed applications~~;

~~wherein the application management portal is further capable of live upgrading of the distributed applications with substantially no interruption to operation~~.

Id., 424-425. In amended claim 1 above, the underlined language highlighted in dark gray was incorporated from previously rejected dependent claim 17; the underlined language highlighted in light gray was incorporated from previously rejected dependent claim 18; and the underlined language highlighted in yellow, green, blue and purple each respectively corresponds to similar language shown in strikethrough format later in the claim and highlighted in the same color, i.e., yellow, green,[2] blue and purple, respectively. The added limitations that were not substantially set forth in a previously rejected claim corresponded to the language highlighted in red, which required that the programmable network and cloud devices be located at the edge and backend of the network, respectively. As discussed below, the Examiner found that these added limitations (highlighted in red) were present in the previously

[2] In the revisions highlighted in green, the Applicant substituted "an application repository" for "an infrastructure application market place."

applied references. In the remarks accompanying amended claim 1, the Applicant stated:

> By this amendment, Applicant has added limitations to independent claim 1 in the following manner.
>
> First, claim 17 has been cancelled and its limitations moved into claim 1. ... Claim 17 was rejected under Claim Li-OpenFlow-Shatzkamer-NFV in view of Draluk.
>
> Second, claim 18 has been cancelled and its limitations also moved into claim 1. ... Claim 18 was rejected over Li-OpenFlow-Shatzkamer-NFV in view of Homiller.
>
> Third, claim 1 [h]as been amended to recite the following with the new language to the claim underlined: "a programmable network device ... located at the wireless edge of the mobile data network; a programmable cloud device ... located at a backend location ...". ... By this Amendment, Applicant clarifies that the programmable network device is located at the wireless edge of the network with visibility into its portion of the network and the programmable cloud device is located a backend location in the network which allows it to control the distributed applications across the entire network. ... The Open Flow reference illustrates a centralized control architecture where a remote switch is controlled by a centralized controller. ... Open Flow does not allow for switches to directly communicate with each other. ...
>
> Applicant respectfully submits that these amendments to claim 1 place the claim in condition for allowance. *Id*., 436-437.

3. Second Examiner Interview

The Applicant then had a further interview with the Examiner during which the Examiner stated that the added limitations requiring that the programmable network and cloud devices be located at the edge and backend of the network, respectively, were not persuasive. In this regard, the Interview Summary stated:

> We also discussed Applicant's Remarks filed on 8/31/201, and the Examiner indicated that the arguments are *not persuasive*, because

> Open Flow is not the primary reference, whereas the primary reference by Li clearly discloses SDN techniques for LTE (wireless) networks. Further. the argument about "allow for switches to directly communicate with each other" is moot because the feature is not claimed. The Applicant agreed with the Examiner's observations. *Id*., 470 (emphasis added).

See also, id., 451-452 (rejecting arguments presented in prior response).

4. Examiner's Amendment

After the second interview, the Applicant and the Examiner exchanged "subsequent email communications" with respect to the language of the claims, and the Applicant authorized an Examiner's Amendment to claim 1 (set forth below in color-coded format) that, in the Examiner's view, put the claim in condition for allowance. *Id*., 453.

> 1. (Currently Amended) A system for processing data packets in a mobile data wireless network, ~~that includes a base station coupled to a core network having a plurality of network elements~~ the system comprising:
>
> a programmable network device ~~configured to host~~ hosting a plurality of first network applications and located at ~~the~~ a wireless edge of the mobile data wireless network;
>
> a programmable cloud device ~~configured to host~~ hosting a plurality of second network applications and located in a core of the mobile data wireless network; ~~at a backend location which allows for control of the first and second network applications across the mobile data network,~~
>
> wherein at least one of the plurality of first network applications in the programmable network device and at least one of the plurality of second network applications in the programmable cloud device are in secure communication with each to form a distributed ~~application~~ ~~applications~~;
>
> the programmable network device is powered by a sandboxing operating system which facilitates deployment of the plurality of first network applications independent of hardware vendor associated with the programmable network device, and facilitates hot upgrade of the plurality of

first network applications with substantially no interruption to operation of the programmable network device;

~~forming unified capabilities enabling a plurality of application programming interfaces (API) that allow for programming of the programmable network device and programmable cloud device independent of the programmable network device and the programmable cloud device, wherein the at least one of the plurality of first network applications and at least one of the plurality of second network applications are given an access level to determine which APIs can be accessed;~~

wherein the programmable network device verifies authenticity and integrity of upgrades to the plurality of first network applications and the programmable cloud device verifies the authenticity and integrity of upgrades to the plurality of second network applications and wherein the verification is based on unique security keys associated with each of the plurality of first and second network applications;

wherein the programmable network device and the programmable cloud device form unified capabilities using a plurality of application programming interfaces (APls) wherein the APls accessible to each of the plurality of the first network applications and the plurality of second network applications are determined based on a respective access level associated with each of the plurality of first and second network applications;

an application repository storing distributed applications which have been tested and certified for installation in the programmable network device and programmable cloud device; and

an application management portal coupled to the programmable network device, ~~and~~ the programmable cloud device and the application repository, wherein the application management portal presents a user interface to manage provisioning, usage and de-provisioning of the distributed applications on the programmable network device and the programmable cloud device ~~is coupled to an application repository which is capable of providing the distributed applications which have been tested and certified to the application management portal for installation in the programmable network device and programmable cloud device~~;

~~wherein the application management portal is further configured to manage a life cycle of the distributed applications, and conduct live upgrades of the distributed applications with substantially no interruption to operation; and~~

~~wherein the programmable network device is adapted to verify the authenticity and integrity of upgrades to the first network applications and~~

~~the programmable cloud device is adapted to verify the authenticity and integrity of upgrades to the second network applications~~.

Id., 453-455. In amended claim 1 above, the underlined language highlighted in yellow, green, blue, purple and dark grey each substantially corresponds to language shown in strikethrough format elsewhere in the claim and highlighted in the same color, i.e., yellow, green, blue, purple and dark grey, respectively. Thus, it is implausible that these changes were material to the Examiner's decision to allow the case. In fact, there were *only two* added limitations that were not substantially set forth in a previously rejected claim, namely, the language highlighted in red, and light grey above.

Focusing first on the new language in light grey above requiring that *verification* be "based on unique security *keys* associated with each of the plurality of first and second network applications," the Examiner understood that this feature was in the prior art. More specifically, this feature (requiring *verification* based on *keys*) was disclosed in [0036] of Homiller -- *the very paragraph* of Homiller that the Examiner *applied in his prior rejection*. *Id*., 344, citing Homiller at [0036] ("Homiller discloses at Block 406, the integrity of the software upgrade package may be verified ... [0036, Fig. 4]") and Ex. 2006, [0036] (Homiller) ("At Block 404, the integrity of the software upgrade package may be verified, ... The *determination of authenticity* may be responsive to a comparison of information, such as an

authorization key, with an authentication code. ... The key or code may indicate a software version and/or source of the software ... The authorization key ... may be separately stored within the initial version of software and the software upgrade package ....”). Given this disclosure in the paragraph of Homiller relied on by the Examiner, it is implausible that the Examiner based his decision to allow the application on the requirement that verification be based on keys.

By contrast, the new language in red above -- requiring that the programmable network device be “*powered by a sandboxing operating system* which facilitates deployment of the plurality of first network applications independent of hardware vendor associated with the programmable network device” -- was plainly *not* disclosed in Shatzkamer[3] (or any of the references applied by the Examiner), and provided a clear rationale for the Examiner’s decision to allow the case. In fact, the Examiner emphasized the importance of the “*sandboxing operating system*” limitation in his reasons for allowance, which provided as follows:

> The following is an examiner’s statement of reasons for allowance:
>
> The currently amended claims recite features that are not disclosed or suggested by the prior art of record. For instance, the prior art does not disclose forming distributed applications between a network application hosted by a network device at the edge of the

[3] The difference between Shatzkamer’s disclosure and the “sandboxing operating system” that the Examiner inserted into claim 1 is discussed in the next section.

> wireless data network (e.g. base station or eNodeB) and a network application hosted by a cloud device in the core of the wireless data network (e.g. MME, SGW, PGW), wherein the network devices are *powered by a sandboxing OS that facilitates deploying the applications in a hardware-independent manner* and facilitates hot upgrades of the applications, wherein devices verify authenticity and integrity of the deployed applications based on the security keys assigned to the applications. Even though the Shatzkamer reference discloses an application repository that stores certified virtual network functions for deployment on physical machines via a web-based portal, *Shatzkamer does not suggest* storing and *provisioning distributed applications as claimed*. Therefore, the prior art of record does not disclose or suggest the subject matter presented in the independent claims as whole. *Id*., 468 (emphasis added).

By way of summary, the prosecution history of the '624 Patent as whole demonstrates that the Examiner's rationale for allowing of the '624 Patent was based on an Examiner's amendment requiring that the programmable network device previously recited in the claims be narrowed to a programmable network device "powered by *a sandboxing operating system*." The prosecution history as a whole demonstrates that, in the Examiner's view, that *every other limitation in claim 1 (as amended by the Examiner) was disclosed in the prior art applied in the prior rejection* of the claim.

5. Prosecution History of '871 Patent

The '871 Patent is a continuation of the '624 Patent, and the claims of the '871 Patent carry forward from the '624 Patent the requirement of a programmable

network device "powered by *a sandboxing operating system*."[4] As shown in the comparison chart below, the claims of the '871 Patent substantially track those of the '624 Patent with the primary exception being that the limitation reciting "unified capabilities" that use "a plurality of application programming interfaces (APIs)" from the '624 Patent has been removed in the '871 Patent:

'871 Patent - Claim 1	'624 Patent - Claim 1
1. A system for processing data packets in a network, the system comprising:	1. A system for processing data packets in a mobile data wireless network, the system comprising:
a programmable network device hosting a plurality of first network applications;	a programmable network device hosting a plurality of first network applications and located at a wireless edge of the mobile data wireless network;
a programmable cloud device hosting a plurality of second network applications;	a programmable cloud device hosting a plurality of second network applications and located in a core of the mobile data wireless network;

[4] As mentioned previously, since the '624 Patent and the '871 Patent derive from the same initial application, the prosecution history regarding a claim limitation in the '624 Patent applies with equal force to the same claim limitation in the '095 Patent. *Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 980 (Fed. Cir. 1999).

wherein at least one of the plurality of first network applications in the programmable network device and at least one of the plurality of second network applications in the programmable cloud device are in secure communication with each other through a virtual fabric to form a distributed application;	wherein at least one of the plurality of first network applications in the programmable network device and at least one of the plurality of second network applications in the programmable cloud device are in secure communication with each other to form a distributed application;
wherein the programmable network device and programmable cloud device are each powered by *a sandboxing operating system* which facilitates deployment of the plurality of first and second network applications;	the programmable network device is powered by *a sandboxing operating system* which facilitates deployment of the plurality of first network applications independent of hardware vendor associated with the programmable network device,
an application management portal coupled to the programmable network device and programmable cloud device	
and capable of managing upgrades of the first and second network applications with substantially no interruption to operation of the programmable network device and programmable cloud device;	and facilitates hot upgrade of the plurality of first network applications with substantially no interruption to operation of the programmable network device;
wherein the application management portal verifies authenticity of upgrades to the plurality of first network applications and the plurality of second network applications;	wherein the programmable network device verifies authenticity and integrity of upgrades to the plurality of first network applications and the programmable cloud device verifies the authenticity and integrity of upgrades to the plurality of second network applications
and wherein the verification is based on unique security keys associated with	and wherein the verification is based on unique security keys associated with

each of the plurality of first and second network applications;	each of the plurality of first and second network applications;
	wherein the programmable network device and the programmable cloud device form unified capabilities using a plurality of application programming interfaces (APIs)
	wherein the APIs accessible to each of the plurality of the first network applications and the plurality of second network applications are determined based on a respective access level associated with each of the plurality of first and second network applications;
an application repository coupled to the application management portal and capable of storing distributed applications for installation in the programmable network device and programmable cloud device; and	an application repository storing distributed applications which have been tested and certified for installation in the programmable network device and programmable cloud device; and
wherein the application management portal further manages usage of the distributed applications on the programmable network device and programmable cloud device.	an application management portal coupled to the programmable network device, the programmable cloud device and the application repository, wherein the application management portal presents a user interface to manage provisioning, usage and de-provisioning of the distributed applications on the programmable network device and the programmable cloud device.

During prosecution of the '871 Patent, the Examiner discussed a "double patent rejection of the claims" in view of, *inter alia*, the '624 Patent. Ex. 1002, 266-

267. The Applicant obviated the double patenting rejection by filing a terminal disclaimer and the Examiner subsequently allowed the application. *Id*., 278.

As noted above, the prosecution history of the '624 Patent as a whole demonstrates that the recitation of a programmable network device "powered by *a sandboxing operating system*" was critical to allowance of the claims. It follows based on the similarities between the claims of the '624 and '871 Patents (as underscored by the Examiner's rejection of the '871 Patent for double patenting over the '624 Patent) that the recitation of the "*sandboxing operating system*" in the '871 Patent was also critical to the allowance of that patent.

B. Difference Between The Sandboxing Operating System Set Forth In The Examiner's Amendment And The Virtualized Application Runtime Environments Disclosed In Shatzkamer And Vasell

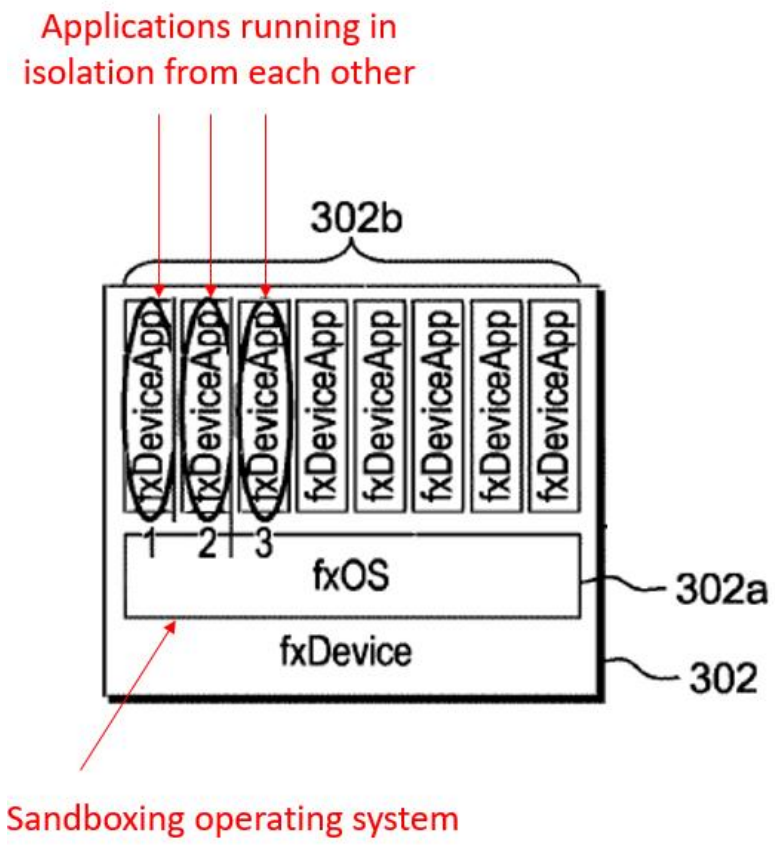
1. Sandboxing Operating System Disclosed In Specification

The specification of the '871 Patent described an example of the claimed "sandboxing operating system" as follows:

> ... A high-level overview of a dSDN system 300 is depicted in FIG. 3. The dSDN system 300 consists of a flexible network device (fxDevice) 302, a flexible cloud platform (fxCloud) 304, an application management portal (fxManager) 306, and an infrastructure application market place(fxStore) 308. *The fxDevice 302 is a network device that is powered by a sandboxing operating system named flexible operating system (fxOS) 302a. The sandboxing operating system ensures each application runs as a dedicated process in sure isolation from the other applications. The fxOS 302a may be built based on an existing sandboxed operating system (OS) (e.g., Android®)* by extending several aspects of such an OS with routing/networking layers and

> supports for operating as the wireless infrastructure. The fxDevice 302 may host *several independent and securely isolated applications* (on top of fxOS 302*a*) named here fxDeviceApp 302*b*. Ex. 1001, 10:12-28 (emphasis added).

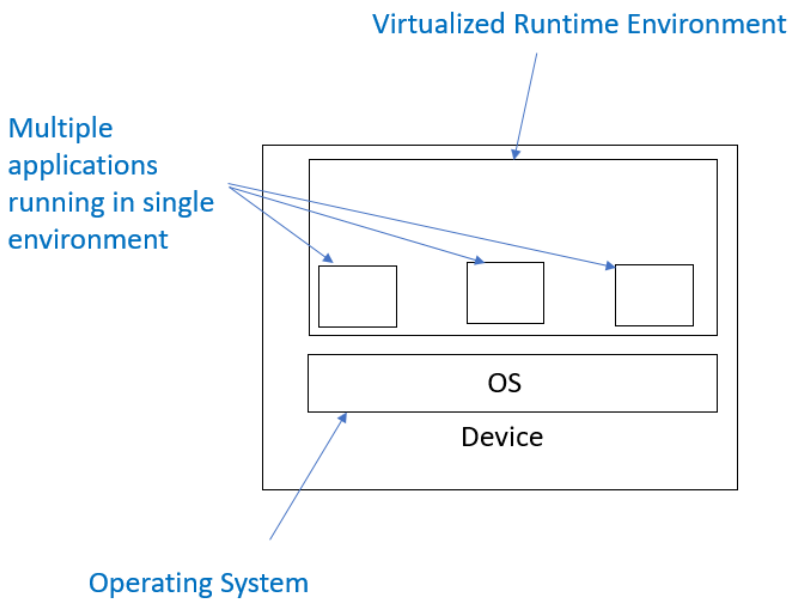
The disclosed sandboxing operating system is shown in Figure 3, which is reproduced in part below with annotations (in red):



As shown above, the "sandboxing operating system named flexible operating system (fxOS) 302a" hosts "several independent and securely isolated applications (on top of fxOS 302a)." Ex. 1001, 10:26-28.

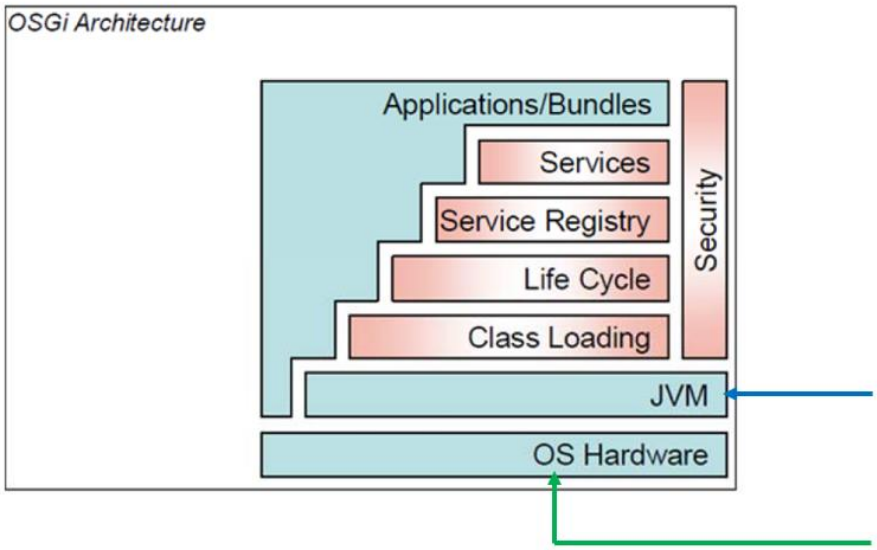
2. A Virtual Runtime Environment Is Not The Same Thing As A Sandboxing Operating System As Disclosed In The Specification

As explained above, in the sandboxing operating system disclosed in the '095 Patent, *several applications* run independently and are *isolated from each other* within *one operating system*. By contrast, a *virtualized runtime environment* is distinct from the operating system on which the virtualized runtime environment sits, and also *lacks isolation* between *different applications running within the environment*. For example, in the Shatzkamer reference applied by the Examiner, the "virtualized application runtime environment" could contain multiple instances of a network function (such as, e.g., Pandora or YouTube) running within the same environment. Ex. 2001, [0032] (disclosing operation of "one or more executable instances" of a network function within a "virtualized application runtime environment") and [0071]-[0072] (describing applications such as Pandora and YouTube as examples of network functions (or services)). Significantly, a single runtime environment such as the one disclosed in Shatzkamer does *not* provide isolation between different applications running in the runtime environment. Below is an illustration created by Patent Owner depicting a single runtime environment such as that disclosed in Shatzkamer:

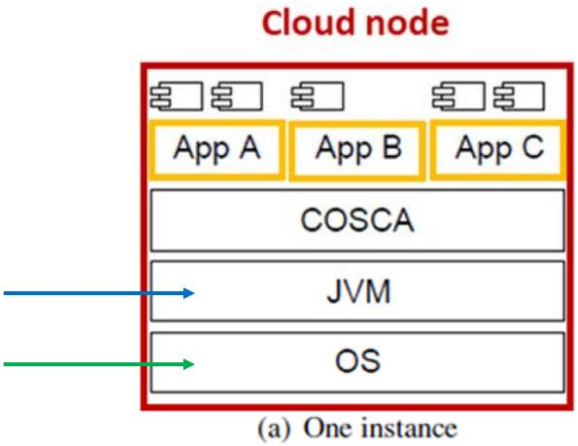


As depicted above, the virtualized runtime environment is *distinct from the operating system* on which the virtualized runtime environment sits, and *lacks isolation* between *different applications running within the environment*.

Petitioner's expert acknowledges that a virtualized runtime environment like that of Shatzkamer is *distinct from the operating system* on which the virtualized runtime environment sits. For example, in the following figure from the declaration of Petitioner's expert (the colored arrows have been added by Patent Owner), the Java Virtual Machine (JVM) (blue arrow) in the OSGi Architecture is *distinct from the operating system* (OS) (green arrow) upon which the JVM sits:



Ex. 1003, ¶193. Later in his declaration, as part of his "Technology Overview," Petitioner's expert again depicts a Java Virtual Machine (JVM) (blue arrow below) as being *distinct from the operating system* (OS) (green arrow) upon which the JVM sits:



Ex. 1003, ¶221 (colored arrows added by Patent Owner). Petitioner's expert in fact describes the *JVM environment* as something "*running on the OS* a networked

device." Ex. 1003, ¶206 (emphasis added). Clearly, a JVM runtime environment and an operating system cannot be one and the same if the JVM "runs on" an operating system.

Petitioner's expert opines that "software/process isolation, confinement, containment, and/or sandboxing occur *in a variety of forms*. (emphasis added). The *common thread* to this sandboxing is that there is always some layer logically below the isolated entities that enforces said isolation." Ex. 1003, ¶115 (emphasis added). In the next sentence, Petitioner's expert explains that an operating system (e.g., a sandboxing operating system) that "isolates processes and containers from each other" is *one way* to achieve isolation, while virtual machines provide a *different way* for achieving isolation. *Id*. Significantly, the claims of the '871 Patent do *not* generically claim *every form* of achieving isolation of applications. Rather, the claims are limited to a system where *an operating system itself provides sandboxing of applications*.

In summary, it is clear that the Shatzkamer reference that the Examiner applied disclosed only a "virtualized application runtime environment," and such a virtualized runtime environment is *distinct from the operating system* on which the virtualized runtime environment sits. Similarly, it is clear that a "virtualized application runtime environment" as disclosed in Shatzkamer is *different* from a "sandboxing operating system" as recited in the claims of the '871 Patent.

3. The Virtual Runtime Environment In Vasell Is Cumulative Of That Disclosed In Shatzkamer

Like the virtualized runtime environment from Shatzkamer described above, the Vasell reference relied upon in the Petition discloses the operation of multiple "gates" which work "*within a single local operating environment* such as a Java Virtual Machine (JVM), or the like." Ex. 1004, 18:27-29 (emphasis added); *see also*, Ex. 1003, ¶131 (noting that a JVM confines *multiple* applications to a *single* area) ("the runtime environment (typically a 'Java Virtual Machine (JVM)') 'resides on the host computer…, and is designed to confine [all Java applications] to a small play area… the sandbox"). The Petition repeatedly describes Vasell's JVM as being "hosted by" or "running on" an operating system, and thus *distinct* from the operating system itself. See, e.g., Pet., 47 (alleging that Vasell discloses "'a Java runtime in the form of a Java virtual machine (JVM)' and '*an operating system' hosting the JVM*"); and 57 (asserting that Vasell discloses a "service application component respectively hosted on a JVM *running on an OS*"). And just like Shatzkamer, there is *no* disclosure in Vasell describing isolation *between multiple applications* (or "gates") running *within Vasell's single local operating environment*. Thus, with respect to the "sandboxing operating system" that was critical to the Examiner's decision to allow the '624 Patent, the Vasell reference relied on in the Petition is, at best, cumulative of the Shatzkamer reference applied

by the Examiner.

C. The *Advanced Bionics* And *Becton Dickinson* Factors Favor Discretionary Denial Because The Vasell Reference Relied On In The Petition Is Cumulative Of The Shatzkamer Reference Applied During Prosecution, And The Petition Has Failed To Allege That The Office Erred In Applying Shatzkamer During Prosecution

As explained in *Advanced Bionics, LLC v. Med-El Elektromedizinische Gerate GMBH*, IPR2019-01469, Paper #6, 7-8 (P.T.A.B. 2020) (Precedential):

> ... 35 U.S.C. § 325(d) identifies two separate issues for the Director to consider in exercising discretion to deny institution of review: *whether the petition presents to the Office the same or substantially the same art previously presented to the Office*, or whether the petition presents to the Office the same or substantially the same arguments previously presented to the Office. ...
>
> Under § 325(d), the art and arguments must have been previously presented to the Office during proceedings pertaining to the challenged patent. *Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS)*, in the prosecution history of the challenged patent. ... If the "same or substantially the same prior art or arguments previously were presented to the Office," then the Board's decisions generally have required a showing that the Office erred in evaluating the art or arguments. See, e.g., *Becton, Dickinson*, Paper 8 at 24 (considering whether the petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art). *If the petitioner fails to show that the Office erred, the Director may exercise his discretion not to institute inter partes review*. *Id*. (exercising discretion where "Petitioner has not pointed to error by the Examiner").

In the present case, Shatzkamer's disclosure was previously applied by the Office and, with respect to the critical limitation of a "sandboxing operating system,"

Vasell is cumulative of Shatzkamer in that both references are limited to a "runtime environment" as opposed to a "sandboxing operating system." It was, therefore Petitioner's burden to demonstrate that the Office erred. Petitioner utterly failed to meet this burden. Petitioner has not even alleged (let alone demonstrated) that the Office erred in applying Shatzkamer during prosecution. Accordingly, discretionary denial of the Petition is warranted under the *Advanced Bionics* framework.

Simply put, institution of inter partes review is not warranted in this case because the Petition relies entirely on prior art that was cumulative of prior art applied by the Patent Office during prosecution. As set forth in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential), the Board considers six non-exclusive factors in determining whether to exercise discretion under 35 U.S.C. § 325(d) based on the prior consideration of art and arguments. When applied to the record here, each of these factors, enumerated below, weighs in favor of discretionary denial.

> (a) the similarities and material differences between the asserted art and the prior art involved during examination;
>
> (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
>
> (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
>
> (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;

(e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

(f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of prior art or arguments.

Specifically, the Shatzkamer reference -- which included a virtualized "runtime environment" -- was applied by the Office during prosecution of the '624 Patent, where the Office concluded that the same "sandboxing operating system" claimed in the '871 Patent was neither shown nor suggested by such a virtualized "runtime environment." With respect to the "sandboxing operating system" claimed in the '871 Patent, the Petition relies on Vasell's "runtime environment" which mirrors that of Shatzkamer which was found wanting. The Petition fails to identify any error in the Office's analysis and offers no material new evidence warranting reconsideration. As detailed below, under the totality of the circumstances, institution should be denied pursuant to 35 U.S.C. §325(d).

1. The Cumulative Nature Of The Art Asserted In The Petition And The Prior Art Considered During Examination Favor Discretionary Denial Under Factors (A) And (B)

The only prior art asserted in the Petition for the "sandboxing operating system" is Vasell. Since Vasell's "runtime environment" is cumulative of that in Shatzkamer, factors (a) and (b) from *Becton, Dickinson* support discretionary denial.

2. The Extent To Which The Asserted Art Was Evaluated During Examination, Including Whether The Prior Art Was The Basis For Rejection; The Extent Of The Overlap

Between The Arguments Made During Examination And The Manner In Which Petitioner Relies On The Prior Art Favor A Discretionary Denial Under Factors (C) And (D)

Shatzkamer was applied by the Office during the prosecution of the '624 Patent, where Shatzkamer formed a basis for the rejection of the claims. *See*, Section II(A), *supra*. Moreover, with respect to the claimed "sandboxing operating system," there is complete overlap between the question presented by Shatzkamer and Vasell: namely, whether a "runtime environment" like that disclosed in both references teaches or renders obvious the "sandboxing operation system" recited in the claims of the '871 Patent - a question that the Office has already answered in the negative. Given this overlap, factors (c) and (d) from *Becton*, *Dickinson* support discretionary denial.

3. Whether Petitioner Has Pointed Out Sufficiently How The Examiner Erred In Its Evaluation Of The Asserted Prior Art And The Extent To Which Additional Evidence And Facts Presented In The Petition Warrant Reconsideration Of Prior Art Or Arguments Favor A Discretionary Denial Under Factors (E) And (F)

The Petitioner bears the burden of showing that the Office erred in finding that a "runtime environment" like that disclosed in Shatzkamer and Vasell teaches or renders obvious the "sandboxing operation system" recited in the claims of the '871 Patent. In the present case, the Petition has not alleged, let alone demonstrated,

that the Office erred. Thus, factors (e) and (f) from *Becton, Dickinson* support discretionary denial.

In sum, all six *Becton, Dickinson* factors—(a) through (f)—support discretionary denial of institution under 35 U.S.C. § 325(d). This is precisely the type of case that the *Becton, Dickinson* factors were intended to address: a Petition that merely repackages art that is cumulative of that already vetted by the Office, without identifying error or providing sufficient justification for a second look. Accordingly, the Director should decline to institute inter partes review in the exercise of her discretion under § 325(d).

D. Petitioner's Feinted Ignorance Of The *Becton Dickinson* Factors Is Unavailing

The Petition alleges:

> Petitioner is unaware of any authority holding *Advanced Bionics* to be satisfied *where (like here) the prosecution history lacks discussion of any reference relied upon in this petition*. In such situations, the Board routinely does not decline institution on §325 grounds. Pet., 82 (emphasis added).

As *Becton Dickinson* makes clear, the prosecution history does *not* need to include a *discussion of the reference(s) relied on in the Petition* in order to meet the standard for discretionary denial. Rather, the *Becton Dickinson* factors focus on "the similarities and material differences *between the asserted art and the prior art involved during examination*" as well as "the *cumulative* nature of the asserted art

and the prior art evaluated." *Becton, Dickinson*, IPR2017-01586, Paper 8 at 17–18 (emphasis added). It strains credulity that Petitioner was unaware that discretionary denial is appropriate where, as here, instead of relying on the *same* art discussed in the prosecution history, the Petition relies on art that is *cumulative* of that applied in the prosecution history.[5]

E. Petitioner's Conclusory Assertion That The Art Presented In The Petition Describes The Claim Limitations Added To Gain Allowance Is False

In its discretionary denial analysis, the Petition sets forth the conclusory allegation that "*the prior art presented describes the claim limitations that were added to gain allowance*." Pet., 82 (emphasis added). In an attempt to support this allegation, the Petition obfuscates by providing a cross-citation to "§V.A-§VII.A.6" of the Petition -- which corresponds to pages *6-79* of the Petition. Nowhere in those pages (or elsewhere) does the Petition identify *any* "claim limitations that were added to gain allowance." In fact, the discussion of the prosecution history in the Petition is limited to a single sentence which merely states: "The Challenged Claims

[5] For example, in another IPR Petition filed by Petitioner's counsel, Petitioner's counsel engages in an analysis of the *Becton Dickinson* factors, including "the similarities and material differences between the asserted art and the prior art involved during examination" and "the cumulative nature of the asserted art and the prior art evaluated." *Ruckus Wireless, Inc. v. Hera Wireless SA et al.*, IPR2018-01739, Petition for Inter Partes Review, Paper 1, at 71-74, Ex. 2005.

received only a double patenting rejection, which was overcome by a terminal disclaimer." Pet., 10. Simply put, the Petition contains no analysis whatsoever to support its position that the prior art presented in the Petition "describes the claim limitations that were added to gain allowance."

In summary, the *Becton, Dickinson* factors support discretionary denial because the Petition merely repackages art that is cumulative of that already vetted by the Office, without identifying error. Petitioner's feinted ignorance of the *Becton Dickinson* factors, which focus on whether the Petition relies on art that is *cumulative* of that discussed in the prosecution history, provides no justification for allowing this IPR challenge to continue. Moreover, Petitioner's conclusory allegation that "the prior art presented describes the claim limitations that were added to gain allowance" lacks any support in the record and therefore is entitled no weight. Accordingly, the Director should exercise her discretion and decline to institute *inter partes* review.

III. PETITIONER'S GAMESMANSHIP IN CONNECTION WITH CLAIM CONSTRUCTION WARRANTS DISCRETIONARY DENIAL

The Petition should be denied under the Director's discretionary authority because the Petition is predicated on claim construction positions that cannot be reconciled with those advanced by Petitioner in the district court. In the district court, Petitioner has taken the position that key claim terms of the '871 Patent are indefinite

or require specific technical structures, such as the presence of a "kernel" in a "sandboxing operating system." Yet, in this IPR, the Petitioner has abandoned those positions in favor of interpretations intended to support invalidity arguments in this IPR—without acknowledging, let alone justifying, the inconsistency.

This type of procedural gamesmanship—advancing narrow claim constructions to avoid infringement in district court while simultaneously asserting broad constructions to support invalidity at the PTAB—is precisely the type of conduct that favors denial of institution. The Board should not permit a petitioner to exploit the IPR process in this manner.

As detailed below, Petitioner's indefiniteness allegations in the district court cannot be reconciled with Petitioner's position here that every term should be given a "plain and ordinary meaning" to a person of ordinary skill in the art. Petitioner's failure to present a consistent and legally sound claim construction, and its reliance on claim interpretations it has elsewhere disparaged, undermine the integrity of this proceeding and provide ample basis for discretionary denial.

A. Petitioner's Mapping Of Vasell To The Claims Of The '095 Patent Fails To Meet Petitioner's Construction Of A "Sandboxing Operating System" Asserted In The District Court

Petitioner's construction of a "sandboxing operating system" in the district court cannot be reconciled with Petitioner's mapping of that term to Vasell in these proceedings. In the district court, Petitioner maintains that a "sandboxing operating

system" is software that, *inter alia*, "contains a *kernel*." Ex. 1071, 7-8 (emphasis added). However, in Petitioner's mapping of Vasell to the claimed "sandboxing operating system," the Petition makes *no mention of a kernel*. Pet., 57-59. In fact, the term "kernel" appears *nowhere* in the Petition, let alone in Vasell.

Petitioner asserts that "the Petition Grounds render the claims unpatentable under either party's construction." (Pet., 12) This assertion is demonstrably *false*, because the Petition does not allege, let alone demonstrate, that Vasell has a sandboxing operating system that includes a *kernel*. The purpose of an IPR is not to provide an accused infringer with a mechanism for simultaneously advancing a narrow claim construction in district court that suits Petitioner's non-infringement arguments and a broad claim construction in the PTAB that suits Petitioner's invalidity arguments. Such gamesmanship favors a discretionary denial of the Petition.

B. Petitioner's Indefiniteness Positions In The District Court Cannot Be Reconciled With Petitioner's Interpretation Of The Claims Of The '095 Patent In This IPR

In the district court, Petitioner maintains that claim 1 of the '095 Patent is indefinite. For example, in the district court, Petitioner contends that the term "powered by" in claim 1 is indefinite because the term "*has no meaning to a POSITA* from a technical perspective." Ex. 1071, 14 (emphasis added). By contrast, in this IPR, Petitioner contends that each claim term can and should "*be given its plain and*

ordinary meaning" as understood by a POSITA. Pet., 12; Ex. 1003, ¶36. These positions are diametrically opposed. A claim term with "no meaning to a POSITA" cannot "be given its plain and ordinary meaning" as understood by a POSITA. Congress did not create the IPR process to provide an accused infringer with a mechanism for simultaneously advancing irreconcilable positions in different forums. The fact that the Petitioner is engaging in this type of gamesmanship provides a further basis for discretionary denial.

Petitioner's indefiniteness positions in the district court are not limited to the term "powered by" but extend to at least four other terms in claim 1 of the '871 Patent. More specifically, in the district court, Petitioner contends that a POSITA would not have been able to understand the meaning of (i) "substantially no interruption" and (ii) "unique security keys associated with each of the plurality of first and second network applications." Ex. 1071, 15-18. By contrast, in this IPR, Petitioner contends that each of these claim terms should "*be given its plain and ordinary meaning*" as understood by a POSITA. Pet., 12; Ex. 1003, ¶36. Again, these positions are diametrically opposed, and provide a further basis for discretionary denial.

Under 37 C.F.R. § 42.104(b)(3), a petitioner must provide a clear articulation of "[h]ow the challenged claim is to be construed." Here, the Petitioner failed to

meet this burden by basing the Petition on claim constructions that Petitioner believes are incorrect. These aspects of the Petition favor discretionary denial.

IV. PETITIONER'S ATTEMPT TO PASS OFF A FABRICATED VERSION OF FIGURE 2 FROM VASELL AS REPRESENTING THE ACTUAL VERSION OF FIGURE 2 FROM THE REFERENCE WARRANTS DISCRETIONARY DENIAL

Without alerting the PTAB that it had made substantive changes to the diagram, the Petition attempts to pass off a fabricated version of Figure 2 of Vasell for the actual figure from the reference. The Petition performs this sleight of hand not once, not twice - but *three times*. Pet., 20, 29 and 47.

Set forth below is the actual version of Figure 2 from Vasell (without any changes or annotations):

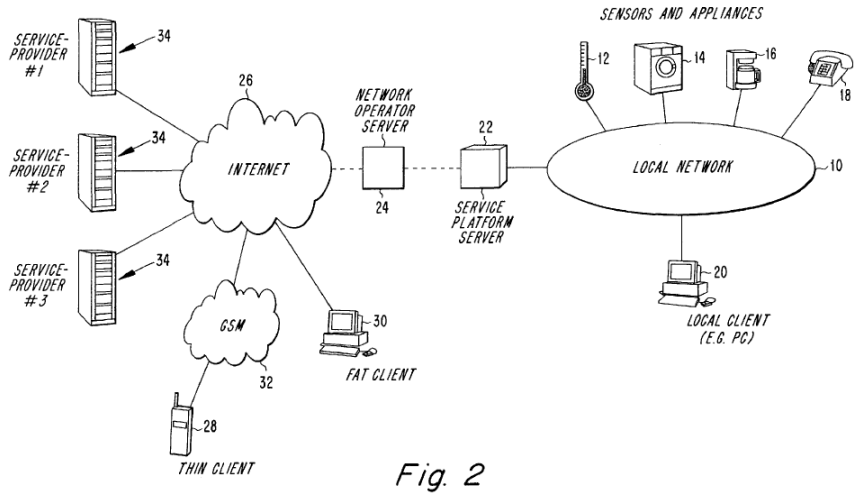


Fig. 2

As shown above, the space above Internet 26 is *completely blank*.

Set forth below is the fabricated version of Figure 2 of Vasell that the Petition (at page 20) attempts to pass off as the real thing:

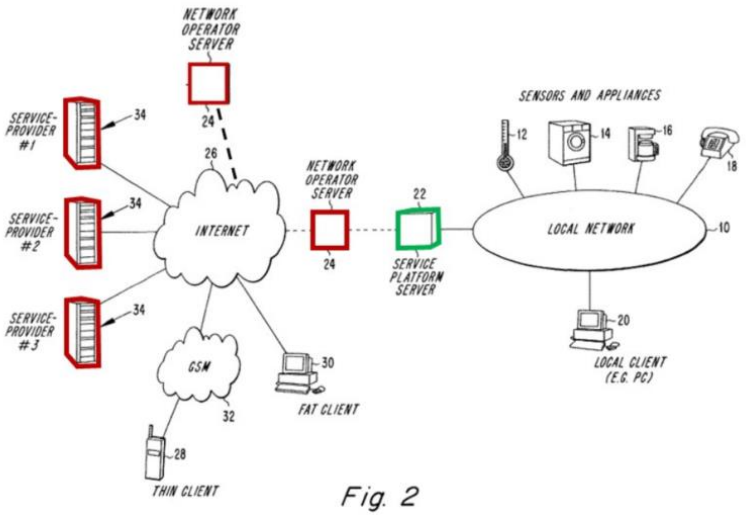


Fig. 2

Pet., 20. As shown above, in the Petition, the space above Internet 26 is *no longer blank*. Instead, the Petition has inserted a *fabricated* "Network Operator Server" 24 into the previously blank space above Internet 26. The Petition never alerts the Board to this issue, essentially passing off the Petition's fabricated version of Figure 2 of Vasell for the real one. The Petition repeats its fabricated version of Figure 2 of Vasell again on pages 29 and 47.

V. THE EXCESSIVE EXPERT TESTIMONY ACCOMPANYING THE PETITION IS USED TO FILL GAPS IN THE RELIED ON REFERENCES WHICH ALSO FAVORS DISCRETIONARY DENIAL

One of the relevant considerations for discretionary denial under 35 U.S.C. § 314(a), as identified in the Memorandum, is "[t]he extent of the petition's reliance on expert testimony." Memorandum, at 1. In this case, the Petition relies heavily on an *291-page* expert declaration (Ex. 1003) comprising 581 paragraphs — well beyond what is appropriate. In addition, the Petition impermissibly and excessively

relies on expert testimony to fill gaps in the prior art. For example, the Petition relies extensively on the testimony of Petitioner's expert for the assertion that Vasell discloses the "sandboxing operating system" recited in claim 1, even though Vasell merely discloses "*a single local operating environment* such as a Java Virtual Machine (JVM), or the like" rather than the claimed "sandboxing *operating system*." Ex. 1004, 18:27-29 (emphasis added); Ex. 1003, ¶¶449-458.

The voluminous expert declaration is also unreliable, as it contains multiple instances of the same fabricated versions of Figure 2 of Vasell set forth in the Petition. *See*, Section III, *supra*; and Ex. 1003, ¶¶ 191, 290 and 391.

Given the extensive and improper use of expert testimony, the Petition fails to comply with statutory requirements and undermines the integrity of the IPR process. Accordingly, this factor further supports discretionary denial under 35 U.S.C. § 314(a) and the guidance of the Memorandum.

VI. PETITIONER'S KNOWLEDGE COMBINED WITH THE FAILURE TO SEEK EARLY REVIEW FAVORS DISCRETIONARY DENIAL

The Petitioner has been on notice of the '624 Patent (the grandparent of the '095 Patent) for over *six years*, because the Office cited the '624 Patent in connection with one of Petitioner's patent applications in April 2019. More specifically, as shown below, the '624 Patent is listed on the face of Petitioner's U.S. Patent No. 10,496,387, with an asterisk indicating that the '624 Patent was cited by the

Examiner during prosecution.

(12) **United States Patent**
Assad

(10) **Patent No.: US 10,496,387 B2**
(45) **Date of Patent: Dec. 3, 2019**

(54) **CROWDSOURCED API RESOURCE CONSUMPTION INFORMATION FOR INTEGRATED DEVELOPMENT ENVIRONMENTS**

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Ex. 2006, 2; *see also*, Ex. 2007, 19 (Notice of References cited accompanying Office Action dated April 3, 2019, Reference "C" under "U.S. Patent Documents").

As explained above, the claims of the '871 Patent substantially track those of the '624 Patent, which Petitioner has been on notice of for many years and taken no action to challenge. Section II(B), *supra*. Given the substantial similarity of the claims of the '624 and '871 Patents, Petitioner's awareness of the '624 Patent and failure to challenge the '624 Patent for many years gave rise to a reasonable and settled expectation on the part of Patent Owner with respect to the '095 Patent. Petitioner's awareness of Patent Owner's patent rights and failure to seek early

review of such rights therefore favors discretionary denial. *See*, *Irhythm Technologies, Inc. V. Welch Allyn, Inc.*, IPR2025-00363, -00374, -00376, -00377, -00378, Paper 10, 3 (P.T.A.B. June 6, 2025) (Coke Morgan Stewart) ("Petitioner's awareness of Patent Owner's applications and failure to seek early review of the patents favors denial").

VII. THE UNRELIABILITY OF THE INFORMATION INCLUDED IN THE PETITION WARRANTS DISCRETIONARY DENIAL

As explained above, Petitioner's assertion that "the Petition Grounds render the claims unpatentable under either party's construction" is demonstrably *false*, because, in the district court, Petitioner maintains that a "sandboxing operating system" is software that, *inter alia*, "contains a *kernel*," but in Petitioner's mapping of Vasell to the claimed "sandboxing operating system," the Petition makes *no mention of a kernel*. Pet., 12, 57-59; Ex. 1071, 7-8 (emphasis added). In fact, the term "kernel" appears *nowhere* in the Petition, let alone in Vasell.

Petitioner's false statement that the Petition renders "the claims unpatentable under either party's construction" is not the only evidence demonstrating that the information in the Petition is unreliable. For example, as explained above, both the Petition and the expert declaration attempt multiple times to pass off a fabricated version of Figure 2 of Vasell for the actual figure from the reference. *See*, Sections IV and V, *supra*.

Petitioner's assertions with respect to discretionary denial discussion further demonstrate that the information in the Petition is unreliable. Specifically, Petitioner's assertion that it is "unaware of any authority holding *Advanced Bionics* to be satisfied *where (like here) the prosecution history lacks discussion of any reference relied upon in this petition*," is suspect. *See*, note 5, *supra*. As the *Becton Dickinson* decision makes clear, the prosecution history does *not* need to include a *discussion of the reference(s) relied on in the Petition* in order to meet the standard for discretionary denial. Rather, the *Becton Dickinson* factors support discretionary denial where, instead of relying on the *same* art discussed in the prosecution history, the Petition relies on art that is *cumulative* of that discussed in the prosecution history.

In yet a further example of unreliability, the Petition sets forth the conclusory (and completely unsupported) allegation that "the prior art presented describes the claim limitations that were added to gain allowance," and then obfuscates the lack of support for the proposition by providing a cross-citation to "§V.A-§VII.A.6" of the Petition -- which corresponds to pages *6-79* of the Petition. Pet., 82; *see also*, Section III(F), *supra*.

Given this pattern of incorrect statements and obfuscations, it is clear that the information in the Petition cannot be taken at face value. Instead, the only way to separate fact from fiction would be to engage in the time-consuming exercise of

checking the accuracy of each and every citation in the 85-page Petition. Engaging in such an exercise is not a good use of the Board's resources. The unreliability of the information set forth in the Petition provide yet an additional reason favoring discretionary denial.

VIII. CONCLUSION

For the reasons set forth above, the Director should exercise her discretion and deny institution.

Respectfully submitted,

Dated: June 15, 2025

By: /Daniel H. Golub/
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CERTIFICATE OF COMPLIANCE WITH WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), I certify that this **BRIEF IN SUPPORT OF PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL** complies with the type-volume limits set forth in the Memorandum and 37 C.F.R. § 42.24 because it contains 11,362 words, excluding the parts of the Brief that are exempted by 37 C.F.R. § 42.24(a), according to the word processing system used to prepare this Brief.

Respectfully submitted,

Dated: June 15, 2025

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CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing **BRIEF IN SUPPORT OF PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL** was served via email (as consented to by counsel) on June 15, 2025 to lead and backup counsel of record for Petitioner as follows:

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