

EXHIBIT F2 - U.S. PATENT 9,123,186 Infringement Claim Chart

Upon information and belief, all '186 Accused Instrumentalities use the same or similar structures to implement the features described in the following chart in materially the same way, unless expressly stated otherwise. Accordingly, the described structures, features, and corresponding infringement contentions are representative of infringement by all '186 Accused Instrumentalities, including Accused Instrumentalities of the Ford and Lincoln brands. In addition, the exemplary evidence cited herein, while representative of all '186 Accused Instrumentalities, is non-exhaustive, based on publicly available information, and provided for illustrative purposes only. AutoConnect reserves the right to supplement or amend these contentions based on information obtained during discovery, and to rely on additional evidence consistent with the infringement theories set forth in its infringement contentions.

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Row	Claim 1	
1A	A method, comprising: (a) receiving, by a microprocessor executable vehicle control system, a request from a vehicle occupant to perform a vehicle task, function or operation; or operation;	The '186 Accused Instrumentalities perform methods that involve the vehicle control system receiving, by a microprocessor ¹ executable vehicle control system, a request from a vehicle occupant to perform a vehicle task, function or operation. For example, the vehicle control system is responsible for a wide range of functions relating to the vehicle's operation, safety, and performance, including controlling the rights and privileges of users to control and operate the vehicle as described, for example, in Rows 1B-1E. As one example, the '186 Accused Instrumentalities include a Phone As A Key feature implemented through Ford vehicles and the FordPass mobile application that permits a mobile device to function as a key to the vehicle, enabling the vehicle occupant to issue a request to unlock a vehicle door or start the vehicle engine. ² The vehicle control system of the '186 Accused Instrumentalities receives such requests and responds to them by, when authorized, performing the requested tasks, functions, and operations. ³

¹ Any reference to a “microprocessor” or “processor” in these contentions includes one or more processors operating individually or in combination to perform the specified claim limitation.

² See, e.g., <https://www.ford.com/support/how-tos/fordpass/phone-as-a-key/how-do-i-set-up-phone-as-a-key-with-the-fordpass-app/>;
<https://www.lincoln.com/support/how-tos/lincoln-app/phone-as-a-key/how-do-i-set-up-phone-as-a-key-for-my-lincoln/>.

³ See, e.g., <https://www.ford.com/support/how-tos/fordpass/phone-as-a-key/how-do-i-set-up-phone-as-a-key-with-the-fordpass-app/>;
<https://www.lincoln.com/support/how-tos/lincoln-app/phone-as-a-key/how-do-i-set-up-phone-as-a-key-for-my-lincoln/>.

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1B (b) determining, by the microprocessor executable vehicle control system, that the vehicle occupant has been authenticated successfully;	The vehicle control system of the '186 Accused Instrumentalities determines that the vehicle occupant has been authenticated successfully. This determination occurs, for example, through recognition of a mobile device that has been paired with the vehicle and determined to have Phone As A Key privileges associated with a user account.⁴ During the setup of a Phone As A Key, the mobile device is paired with the vehicle control system, which creates a unique encrypted link between the mobile device and the vehicle control system that can be used for secure communication between the device and vehicle when the device is recognized.⁵ In addition, the vehicle and device are linked to an account on the FordPass App⁶ with user account credentials during the Phone As A Key creation process.⁷ Prior to carrying out requested vehicle tasks such as unlocking the vehicle or starting the engine, the vehicle control system of the '186 Accused Instrumentalities assesses authentication of the vehicle occupant through recognition of the vehicle occupant's mobile device via an established Bluetooth link with the vehicle.⁸ The vehicle control system of the '186 Accused Instrumentalities also assesses whether the vehicle occupant's user credentials in the FordPass App are recognized.⁹ If the vehicle control system does not recognize the Bluetooth connection and/or user credentials, the vehicle control system will not authenticate the vehicle occupant.
1C (c) accessing, by the microprocessor executable vehicle control system, an account for the	The vehicle control system of the '186 Accused Instrumentalities accesses an account for the vehicle occupant, the account defining rights and privileges of the user with respect to controlling a vehicle task, function or operation, wherein the vehicle task, function or operation is one or more of the

⁴ See, e.g., <https://www.ford.com/support/how-tos/fordpass/phone-as-a-key/how-do-i-set-up-phone-as-a-key-with-the-fordpass-app/>; <https://www.lincoln.com/support/how-tos/lincoln-app/phone-as-a-key/how-do-i-set-up-phone-as-a-key-for-my-lincoln/>.

⁵ See, e.g., <https://www.ford.com/support/how-tos/fordpass/phone-as-a-key/how-do-i-set-up-phone-as-a-key-with-the-fordpass-app/>.

⁶ The Ford and Lincoln applications are materially identical with respect to the operation and implementation of Phone As A Key, and all references to the "FordPass App" should be understood as referring to both applications.

⁷ See, e.g., <https://www.ford.com/support/how-tos/fordpass/phone-as-a-key/how-do-i-set-up-phone-as-a-key-with-the-fordpass-app/>.

⁸ See, e.g., <https://www.ford.com/support/vehicle/mustang-mach-e/2022/how-to-videos/video-library/fordpass/6314812509112?name=fordpass-using-phone-as-a-key>; <https://www.ford.com/support/vehicle/mustang-mach-e/2022/how-to-videos/video-library/fordpass/6314812509112?name=fordpass-using-phone-as-a-key>; <https://www.ford.com/support/how-tos/fordpass/phone-as-a-key/how-do-i-set-up-phone-as-a-key-with-the-fordpass-app/>.

⁹ See, e.g., <https://www.ford.com/support/how-tos/fordpass/phone-as-a-key/how-do-i-set-up-phone-as-a-key-with-the-fordpass-app/>.

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vehicle occupant, the account defining rights and privileges of the user with respect to controlling a vehicle task, function or operation, wherein the vehicle task, function or operation is one or more of the following: monitoring, controlling, and/or operating an engine control unit (“ECU”), transmission control unit (“TCU”), door setting, window setting, blind spot monitor, safety equipment, vehicle engine, head light control unit, power steering, display panel, power steering, vehicle sensor, vehicle engine, head light control unit, power steering, display panel, switch state control unit, power control unit, brake control unit, alert to a user and/or remote monitoring entity of a potential problem with a vehicle operation, emission control, entertainment system, and media and/or multimedia content;	following: monitoring, controlling, and/or operating an engine control unit (“ECU”), transmission control unit (“TCU”), door setting, window setting, blind spot monitor, safety equipment, vehicle sensor, vehicle engine, head light control unit, power steering, display panel, switch state control unit, power control unit, brake control unit, alert to a user and/or remote monitoring entity of a potential problem with a vehicle operation, emission control, entertainment system, and media and/or multimedia content.¹⁰ For example, the vehicle control system accesses a FordPass account associated with the occupant that identifies rights and privileges of the occupant to control and operate the vehicle engine or unlock vehicle doors using a particular device, including the device used to authenticate the vehicle occupant.¹¹ The vehicle control system determines whether the account is permitted to operate the vehicle engine by determining whether the account has Phone As A Key privileges. For example, the vehicle control system determines whether the vehicle occupant’s account has an active Phone As A Key, or whether the vehicle occupant has been granted Phone As A Key rights and privileges by a primary user.¹² This is evidenced by the requirements that the vehicle occupant be logged into the FordPass app with their specific credentials and there is an active Phone As A Key connected to the account. If either of these requirements is not met, the vehicle control system will not permit the vehicle occupant to control the engine control unit or door settings using a Phone As A Key.

¹⁰ See, e.g., <https://www.ford.com/support/how-tos/fordpass/phone-as-a-key/how-do-i-set-up-phone-as-a-key-with-the-fordpass-app/>.

¹¹ See, e.g., <https://www.ford.com/support/how-tos/fordpass/phone-as-a-key/how-do-i-set-up-phone-as-a-key-with-the-fordpass-app/>.

¹² See, e.g., <https://www.ford.com/support/vehicle/mustang-mach-e/2022/how-to-videos/video-library/fordpass/6314812509112?name=fordpass-using-phone-as-a-key>; <https://www.ford.com/support/how-tos/fordpass/phone-as-a-key/how-do-i-set-up-phone-as-a-key-with-the-fordpass-app/>.

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1D	(d) determining, by the microprocessor executable vehicle control system, at least one of an area and/or zone occupied by the vehicle occupant and an operating state of the vehicle; and	The vehicle control system of the '186 Accused Instrumentalities determines at least one of an area and/or zone occupied by the vehicle occupant and an operating state of the vehicle. For example, the vehicle control system determines whether the mobile device associated with the user having Phone As A Key privileges is located in a zone inside the vehicle.¹³ For example, the vehicle control system determines whether the mobile device associated with the user having Phone as a Key privileges is located in a zone inside the vehicle. It also determines whether the vehicle operating state is on or off. In describing operation of Phone As A Key, a Ford website indicates that the phone must be in the passenger cabin area for the vehicle start/stop button to be enabled. Ford vehicles with Phone As A Key also have Bluetooth transceiver(s) in the passenger compartment for operation of the Phone As A Key system.¹⁴ <i>See also</i> Rows 1B-1C.
1E	(e) based upon the account corresponding to the vehicle occupant and the at least one of an area and/or zone occupied by the vehicle occupant and an operating state of the vehicle, applying, by the microprocessor executable vehicle control system, the following rules:	In the '186 Accused Instrumentalities, based upon the account corresponding to the vehicle occupant and the at least one of an area and/or zone occupied by the vehicle occupant and an operating state of the vehicle, the vehicle control system applies the following rules: (1) when the account permits the vehicle occupant to perform the requested vehicle task, function or operation, performing or causing to be performed the vehicle task, function or operation; and (2) when the account does not permit the vehicle occupant to perform the requested vehicle task, function or operation, not performing or causing to be performed the vehicle task, function or operation. For example, the vehicle control system of the '186 Accused Instrumentalities, based on the identification of the mobile device and an associated user account, determines whether (1) that account holds Phone As A Key privileges, and (2) whether that the device is located within the zone of the vehicle interior, to allow or deny the

¹³ See, e.g.,

https://www.fordservicecontent.com/Ford_Content/vdirtsnet/OwnerManual/Home/Content?variantid=6999&languageCode=en&countryCode=USA&Uid=G1886145&ProcUid=G1890125&userMarket=usa&div=1&vFilteringEnabled=False&buildtype=web.

¹⁴ See, e.g.,

https://www.fordservicecontent.com/Ford_Content/vdirtsnet/OwnerManual/Home/Content?variantid=6999&languageCode=en&countryCode=USA&Uid=G1886145&ProcUid=G1890125&userMarket=usa&div=1&vFilteringEnabled=False&buildtype=web.

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	(i) when the account permits the vehicle occupant to perform the requested vehicle task, function or operation, performing or causing to be performed the vehicle task, function or operation; and (ii) when the account does not permit the vehicle occupant to perform the requested vehicle task, function or operation, not performing or causing to be performed the vehicle task, function or operation.	occupant the ability to perform a requested vehicle task, such as starting the vehicle engine from a non-operating state. See Rows 1B-1D.
Row	Claim 2	
2A	The method of claim 1, wherein, in step (e), the microprocessor executable vehicle control system applies the rules based on the account corresponding to the vehicle occupant and the area and/or zone occupied by the vehicle occupant and	The '186 Accused Instrumentalities perform the method of claim 1, as described above. The vehicle control system of the '186 Accused Instrumentalities applies rules based on the account corresponding to the vehicle occupant and the specific area and/or zone occupied by the occupant. The vehicle control system evaluates the occupant's location as being in a specific area and/or zone by processing signals from Bluetooth Low Energy transceivers in the Phone As A Key system.¹⁵
2B	wherein the vehicle occupant can perform a first set of vehicle tasks, functions or operations when in a	The vehicle control system of the '186 Accused Instrumentalities allows the vehicle occupant to perform a first set of tasks, functions, or operations when in a first area and/or zone and a different set of vehicle tasks, functions, or operations when in a different second area and/or zone. For example,

¹⁵ See, e.g., <https://www.omnicraftautoparts.com/content/dam/omnicraftassets/PDF/Ford-Bluetooth-Entry-Systems-v620200706.pdf>.

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	first area and/or zone and a different set of vehicle tasks, functions, or operations when in a different second area and/or zone.	when the mobile device with an authorized Phone As A Key is detected near a specific door, the system may apply rules to permit unlocking only that door, whereas if the mobile device is detected near a different door, the system may apply rules to permit unlocking that door instead. ¹⁶ As another example, when the mobile device with an authorized Phone As A Key is detected in the interior of the vehicle, the system applies rules that permit the vehicle engine to be started, which cannot be performed if the mobile device is not detected as being inside the vehicle (such as in an exterior zone around a door). ¹⁷
Row	Claim 4	
3A	The method of claim 1, wherein, in step (e), the microprocessor executable vehicle control system applies the rules based on the account corresponding to the vehicle occupant and the operating state of the vehicle and	The '186 Accused Instrumentalities perform the method of claim 1, as described above. The microprocessor executable vehicle control system applies rules based on the operating state of the vehicle and the account corresponding to the vehicle occupant. For example, the vehicle control system detects a mobile device with a Phone As A Key and determines whether that Phone As A Key is authorized to start the vehicle engine, as described in Row 1E. Further, the vehicle control system verifies the vehicle's operating state (<i>e.g.</i>, whether the engine is off) before allowing the engine to start when an authorized Phone As A Key is detected, as evidenced by the engine start functionality not being engaged unless the vehicle engine is off.
3B	wherein the vehicle occupant can perform a first set of vehicle tasks, functions or operations when the vehicle is in a first operating state and a different set of vehicle tasks, functions, or operations when the	In the '186 Accused Instrumentalities, the vehicle occupant can perform a first set of vehicle tasks, functions, or operations when the vehicle is in a first operating state and a different set of vehicle tasks, functions, or operations when the vehicle is in a second operating state. For example, the ability to unlock a door or start the engine using the Phone As A Key is available only when the vehicle is in a non-operating state (<i>e.g.</i>, not in motion or parked with the engine off, respectively), but not when the vehicle is already in an operating state (<i>e.g.</i>, engine running or in gear), as evidenced by the starter engaging only when the vehicle engine is not running.

¹⁶ See, *e.g.*, <https://www.omnicraftautoparts.com/content/dam/omnicraftassets/PDF/Ford-Bluetooth-Entry-Systems-v620200706.pdf>; <https://media.lincoln.com/content/dam/lincolnmmedia/lna/us/product/2020/Aviator/Lincoln-Phone-AsAKey-Fact-Sheet.pdf>.

¹⁷ See, *e.g.*, <https://www.omnicraftautoparts.com/content/dam/omnicraftassets/PDF/Ford-Bluetooth-Entry-Systems-v620200706.pdf>.

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	vehicle is in a second operating state.	
Row	Claim 4	
4	The method of claim 1, wherein rule (i) applies and the vehicle occupant is able to control the requested vehicle task, function or operation using one or more of a cell phone, laptop, tablet computer, and personal digital assistant.	The '186 Accused Instrumentalities perform the method of claim 1, as described above. When the vehicle control system of the '186 Accused Instrumentalities recognizes that a vehicle occupant has a mobile device with a Phone As A Key inside the vehicle and the occupant has been successfully authenticated (<i>i.e.</i>, rule (i) of claim 1 applies), the vehicle occupant is able to control the requested vehicle task, function or operation using one or more of a cell phone, laptop, tablet computer, and personal digital assistant.¹⁸ For example, the Phone As A Key on the mobile device connects to the vehicle control system, and the FordPass app interface provides for the vehicle occupant to unlock a door or start and operate the vehicle engine from a cell phone.¹⁹
Row	Claim 6	
6	The method of claim 1, wherein the account comprises rights and privileges for the vehicle occupant with respect to a vehicle task, function or operation, security	The '186 Accused Instrumentalities perform the method of claim 1, as described above. The account accessed by the '186 Accused Instrumentalities comprises rights and privileges for the vehicle occupant with respect to a vehicle task, function or operation, wherein the vehicle task, function, or operation is one or more of entertainment system and media and/or multimedia content.

¹⁸ See, e.g., <https://www.omnicraftautoparts.com/content/dam/omnicraftassets/PDF/Ford-Bluetooth-Entry-Systems-v620200706.pdf;https://media.lincoln.com/content/dam/lincolnmedia/lna/us/product/2020/Aviator/Lincoln-Phone-AsAKey-Fact-Sheet.pdf>.

¹⁹ See, e.g., https://www.omnicraftautoparts.com/content/dam/omnicraftassets/PDF/Ford-Bluetooth-Entry-Systems-v620200706.pdf;https://media.lincoln.com/content/dam/lincolnmedia/lna/us/product/2020/Aviator/Lincoln-Phone-AsAKey-Fact-Sheet.pdf;https://www.fordservicecontent.com/Ford_Content/vdirtsnet/OwnerManual/Home/Content?variantid=7430&languageCode=en&countryCode=USA&Uid=G2103918&ProcUId=G2149426&userMarket=usa&div=f&vFilteringEnabled=False&builddtype=web;https://www.ford.com/support/vehicle/mustang-mach-e/2021/how-to-videos/video-library/fordpass/6236995152001?name=phone-as-a-key-with-walk-away-locking/.

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and/or authentication requirements and/or credentials for the vehicle occupant, and personal settings of the vehicle occupant and wherein the vehicle task, function, or operation is one or more of the following: entertainment system and media and/or multimedia content.	For example, Ford offers several account-based subscription services that allow for different functionalities of the infotainment system of the '186 Accused Instrumentalities, such as Connectivity Services and Connected Navigation.²⁰ These subscription services are linked to a user's account and determine the rights and privileges the account has with respect to specific entertainment system and/or multimedia content, such as whether the vehicle occupant may access cloud services like Amazon Music, Peacock, or Sirius XM through the vehicle infotainment system, or whether certain navigation features are enabled, such as Connected Navigation.²¹ In order to access these services, the vehicle occupant must load a user profile linked to the vehicle occupant's Ford account to the infotainment system. Upon information and belief, the account accessed by the '186 Accused Instrumentalities also comprises security and/or authentication requirements and/or credentials for the vehicle occupant. For example, in addition to the authentication requirements described with respect to Phone As A Key in Claim 1, Row 1B, the vehicle occupant must be signed in with a user profile on the infotainment system of the '186 Accused Instrumentalities to use the account-linked services and media. To load a user profile, the vehicle occupant must have paired a smartphone to the infotainment system with Bluetooth and have entered a PIN to the infotainment system while logged into the FordPass App to verify the profile.²² The account accessed by the '186 Accused Instrumentalities also comprises personal settings of the vehicle occupant. Settings that may be saved to a User Profile corresponding to the vehicle occupant include radio and preset favorites, seat settings, temperature settings, lighting settings, and more.²³

²² See, e.g., <https://www.ford.com/support/vehicle/mustang-mach-e/2021/how-to-videos/video-library/fordpass/6236995152001?name=phone-as-a-key-with-walk-away-locking/>; <https://www.lincoln.com/support/how-tos/lincoln-app/phone-as-a-key/what-are-some-basic-troubleshooting-tips-for-using-phone-as-a-key-with-my-lincoln-vehicle/>; <https://www.youtube.com/watch?v=IvJKtz9JWzg&t=561s>.

²³ See, e.g., <https://www.ford.com/support/how-tos/sync/getting-started-with-sync/how-do-i-create-a-personal-profile-with-sync/>.