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10 APC all p		9 API Get		Developer	Geo-location should be obtained.	?	Depend on sensor	Web runtime(Browser)	Yes	no	13, 37	
11 APC Depend one short Network	1	10 API Get		Developer	Weather around car should be obtained.	?	Depend on sensor	Web runtime(Browser)	Yes	no	19	
12 Pictores Pictores Pictores Monager binomia Only englicitoria mice StaAP in sufficience Note application and the staAP is sufficience Not		11 API Get		Developer	Camera image around car should be obtained.	?	Depend on sensor	Web runtime(Browser)	Yes	no	20, 22	
17 API Set Set API Only one septemication on use "betAPI" simultaneous), representation on use "betAPI", representation on use "betAPI" simultaneous), representation on use simultaneous, representation use simultaneous, representation on use simultaneous, representation on use simultaneous, representation on use simultaneous, representation use simultaneous, representation on use simultaneous, representation on use simultaneous, representation use sin use setup on use sin useno	2	27 Publicness		?	Automaker should have responsibility to comply with govermental regulations.	0		Web runtime(Browser)	Yes	Yes	13, 30	
19 19 Site APA Description Yes Ves	1	17 API Set	Set API	Automaker?	Only one application can use "Set API" simultaneously.	?	How about background application?	Web runtime(Browser)	More general	Yes?	49	
10 20.4 Pist BeA/P Automater Sately including and single and have by publication. Vein Vein <t< td=""><td>1</td><td>19 API Set</td><th>Set API</th><td>Developer</td><td>Sheet position, Window and lock can be "set".</td><td>х</td><td></td><td>Web runtime(Browser)</td><td>Yes</td><td>Yes</td><td>28, 34, 17, 25,</td><td></td></t<>	1	19 API Set	Set API	Developer	Sheet position, Window and lock can be "set".	х		Web runtime(Browser)	Yes	Yes	28, 34, 17, 25,	
12 APS dis Set API Aubmaler Cost Pain Aubmaler Cost Pain Pain Pain Pain Pain Pain Pain Pain	2	20 API Set	Set API	Developer?	Safety critical functionality (e.g. airbug) can be "set".	х	Even in the future this might have to be prohibited.	Web runtime(Browser)	Yes	Yes	11, 43	
12 24 API state 34 API state 74 API state	2	21 API Set	Set API	Automaker	Access to the drive-train must be prohibited in a clear way.	0		Web runtime(Browser)	Yes	Yes	2	
6 API Accessity Develop: (user) API accessity Automate Automakes spote a basit of Viecke IPI of spote (API of spote) Yes Yes API Accessity Automate Automakes spote a basit of Viecke IPI of spote (API of spote) Yes Yes API Accessity Automate Automakes spote a basit of Viecke IPI of spote (API of spote) Yes	2	22 API Set	Set API	Automaker	"Set API" should be accessible only via an automaker's cloud server.	0	Even in the future this might have to be kept.	Cloud	Yes	Yes	31, 32	
1 API Automaker Automaker Automaker C is not_supported_builess_polynowpoly fribin purpose? Web unfine@iccover) Yes Yes <t< td=""><td></td><td>6 API</td><th>API Accessibility</th><td>Developer, User</td><td>API should be available even if engine is off.</td><td>х</td><td>need architecture discussion</td><td>Car server?</td><td>Yes</td><td>Yes</td><td>47, 45, 28, 34, 1</td><td>7, 25</td></t<>		6 API	API Accessibility	Developer, User	API should be available even if engine is off.	х	need architecture discussion	Car server?	Yes	Yes	47, 45, 28, 34, 1	7, 25
2 API API Accessible Automate: Develope API or specific apdication/wheble) 7 is restriction based on whebleschostame encogh for this purpose? Ves Ves 8 3 API Cet API Accessible Automate: Develope and way owelf apdication ID. 7 is trestriction based on whebleschostame encogh for this purpose? SSH7 Ves Ves 7 2 API Accessible Automate: Develope and based on whetemal develope and way owelf apdication ID. 0 Is ovelicle API develope and based on whetemal develope and way owelf apdication ID. Ves		1 API	API Accessibility	Automaker	Automakers expose a subset of Vehicle API to developer	?	Is not_supported_business_policy enough for this purpose?	Web runtime(Browser)	Yes	Yes	29	
3 API Advances Term mut be avery twy application. D. 9 sh aream to meet this purpose SH7 More general Yes 9 5 API Accessibility Liser should be possible to restork API downling on application. 0 is whende API downling. More general Yes 25 7.4 25 Shift API Accessibility Liser should be possible to restork API downling. Yes 25 7.4 25 Shift API Accessibility App2 More general Yes 25, 24, 12, 14 1		2 API	API Accessibility	Automaker	Automakers expose API only for specific applications(website)	?	Is restriction based on whitelisted-hostname enough for this purpose?	Web runtime(Browser)	Yes	Yes	3	
1 AP/A Cett API Accessibility Automate Control Yes Yes Yes API 5 API API Accessibility Users should be able to have access to his content which is stored in dour serves. 0 Is current we sarvice enough of his purpose? App? More general Yes API API </td <td></td> <td>3 API</td> <th>API Accessibility</th> <td>Automaker, Developer</td> <td>There must be a way to verify application ID.</td> <td>?</td> <td>ssh seems to meet this purpose</td> <td>SSH?</td> <td>More general</td> <td>Yes</td> <td>9</td> <td></td>		3 API	API Accessibility	Automaker, Developer	There must be a way to verify application ID.	?	ssh seems to meet this purpose	SSH?	More general	Yes	9	
5 API API Accessibility Luer Users should be possible to restord. API depending on application. O Intermediation application Web numbers (Nep on application) Note general Yes S7.44 23 Truited Comm Communication Develope API Accessibility Note general Yes S2.53 S2.53 S2.53 S2.54 S2.54 S2.54 S2.54 S2.55		8 API Get	API Accessibility	Automaker	"Get API" can be accessible only via an automaker's cloud server.	0	if so vehicle API doesn't need	Cloud	Yes	Yes	31	
22 Trusted Comm Communication User User should be able to here access to his outnet which is stored in doub service mouph of his purpose? App? More general Yes S2 23 Trusted Comm Communication User and the accessible encode/. Application should be able concessible encode/. App? Wes Yes Yes S2		5 API	API Accessibility	User	Users should be possible to restrict API depending on application.	0		Web runtime(Browser), App?	More general	Yes	27, 44	
12 12<	2	29 Trusted Comm	Communication	User	Users should be able to have access to his content which is stored in cloud servers.	0	Is current web service enough for this purpose?	App?	More general	Yes	53	
7APIAPI Accessibility Developes (12 API Cell Communication DevelopesMethods be accessible remotely: (13 API Cell (14	2	28 Trusted Comm	Communication	Developer	Application should be able to connect with external devices.	?	Is ssh enough for this purpose?	App?	More general	Yes	52, 54, 12, 14	
12 Ormanication Develope Obtaine data cannot be tampered. X Hardbace?? Web undime@flower?? Web undime@flower?? Web undime@flower?? Yes 4,7,10,5 16 Jude's rights for the User Logins ront concord FUNT is tamped. 0 Web undime@flower?? Yes Yes 5 14 Jude's rights for the User Application should regreed FUNT setting. 0 Web undime@flower?? Yes Yes 5,21,40,41,43 14 Jude's rights for the Automake? Login should be protected if an emergency arise. 0 Web undime@flower?? Yes Yes 2,4,51,43 13 APLica Login should be protected if an emergency arise. 0 Web undime@flower?? Web undime@flower?? Yes 2,4,51,43 13 APLica Login should be protected forn hacks or orgun mechanics. 0 Applica Applica Yes 4,61,83 31 Aplica Multi Diver#Passe User Multica indivert andiver andi		7 API	API Accessibility	Developer, User	API should be accessible remotely.	х	need architecture discussion	App?	Yes	Yes	17, 18, 25, 26, 2	8, 46, 47
19 APLog User's rights for the User Log is not incorded if ONT is tamed to be ON. 0 Method miningBrower) Yes Yes 15 24 Abla Control User's rights for the Automaker' Application should respect INT is tamed to be ON. 0 Application should respect INT is tamed to be ON. 0 Application should respect INT is tamed to be ON. 0 Application should respect INT is tamed to be ON. 0 Web nutime@Toware) Yes Yes So 21, 0, 41, 43 0 13 API Log of the Automaker' Log should be proteched is an emproprior sites. 0 O Web nutime@Toware) Yes Yes 24, 51 24, 51 13 API Log of the Net Network hasses Developer' Protechon gains in the Automaker' Yes Yes 24, 51 24, 51 33 Bata Get In Mut DiversPhasse Developer' Protechon gains in the Ves Yes 48 24, 51 36 3	1	12 API Get	Communication	Developer	Obtained data cannot be tampered.	х		Hardware?, Web runtime(Browser)?	More general	Yes	4, 7, 10, 55	
24 Data Control User's rights for the User Appl Appl More general Yes S 4 API User's rights for the Automater? Log should be protected in an emergroup varie. O Web nutringEtower) Yes Yes S 2,4,4,4 14 API Log User's rights for the Automater? Log should be protected in an emergroup varie. O Web nutringEtower) Yes Yes 2,4,5,1 13 API Log API Accessable only by application whold balaned the log. O Web nutringEtower) Yes Yes 2,4,5,1 31 Intruion Protection against Liker Intruion on those protection against Liker Mut Dirver/Passe Developer Nut Dirver/Passe Developer	1	16 API Log	User's rights for th	ne User	Log is not recorded if DNT is turned to be ON.	0		Web runtime(Browser)	Yes	Yes	15	
I API User's rights for the Automate? AyAP restriction should be growed if an emergency usite. O Web number@howed) Yes Yes S2,1,4,4,43 11 API Log User's rights for the Automate? Log should be protected is an emergency usite. O Web number@howed) Yes Yes S2,1,4,4,43 13 API Log API conceptibility Log should be protected is an emergency usite. O Web number@howed) Yes Yes S2,1,40,4,43 13 API Log API conceptibility Log should be accessible on by application which obtained the log. Yes Yes Yes S2,4,51 33 Data Cel Mult DiversPhase Divespher Reportible partly is harged Xes Protection againston More general Yes Set Set 38 Data Cel Mult DiversPhase User Walkab InteresPhase User Walkab InteresPhase User Web number@howed) Yes Yes Set 39 Data Control User's rights for the User Data destrinkts for the User Data destrinkts for the User Data destrinkts for the User Set Set 20 Data Control User's rights for the User Data destrinkts for the User Data destrinkts for the User Set Set Set 21 API Set Mult DiversPhase User User's rights for the User Data destrinkts for th	2	24 Data Control	User's rights for th	ne User	Application should respect DNT setting.	0		App	More general	Yes	5	
14 APLog User's rights for the Automater C pothold be protected is an emergency arise. 0 Web number[Towner] Yes Yes 24 24 13 APLog APA Accessable only by aplication which obtained the tog. 0 Web number[Towner] Yes Yes 24 24 31 Intruion Protection against i User Intruion detection 0 Med protection 7 More general Yes 48 48 33 Draymet Multi Divers/Passe Divers/Dess Divers/De		4 API	User's rights for th	ne Automaker?	Any API restriction should be ignored if an emergency arise.	0		Web runtime(Browser)	Yes	Yes	5, 21, 40, 41, 43	
13 APLog API-Log application which obtained the log. 0 Web numer@lowser) Yes Yes Yes 33 Instruction Protection against User Instruction detection X Application which obtained the log. 0 Application which obtained the log. 0 33 Instruction Multip Divers/Passe Developer Responsible party is draged 0 Application which obtained the log. 0 38 Data Cell Multip Divers/Passe User Multip Divers/Pass	1	14 API Log	User's rights for th	ne Automaker	Log should be protected is an emergerncy arise.	0		Web runtime(Browser)	Yes	Yes	21	
34 Indication against Uker Indication against Uker Indication against Uker More general Yes 46 33 Dyamer Multi Divers/Passe Develope Responsible provided for machines or rogue mechanics. O Application against Liner Multi Divers/Passe Develope Wes purples for Multi Divers/Passe Develope Wes purples for Multi Divers/Passe Develope More general Yes 0 33 Divers BerA PL Developer Multi Divers/Passe Developer Wes purples for Multi Uker Yes 16, 18, 23 2 37 Data Control Developer Multi Divers/Passe Developer Multi Divers/Passe Developer Yes 16, 18, 23 2 37 Data Control Developer Induid offer ways for controlling user's data O Cloud Application Nore general Yes 16, 18, 23 25 Data Control Developer Induid offer ways for control data set and data granularity depending on application. O Application Web nutlines(Tower) Yes Yes 16, 18, 12, 27, 30, 4. 32 25 Data Control Users on closs for the User Users on closs for the User Users on closs for the User User on closs for the User Yes Yes 1 25 Data Control Users on closs for the User Users on closs for the User	1	13 API Log	API Accessibility	User	Log should be accessible only by application which obtained the log.	0		Web runtime(Browser)	Yes	Yes	24, 51	
33 Parkmet Multi DiversPhase Developer Regionable party is draged 0 App? Multi DiversPhase Developer Multi DiversPhase Uner Multi DiversPh	3	34 Intrusion	Protection against	t i User	Intrusion detection	х		?	More general	Yes	48	
33 Data Cet Multi Driver/Passa User Value information should be protected from hackers or rogue mechanics. 0 Application from the processing of the procesing of the processing of the processing of the processing o	3	33 Payment	Multi Drivers/Pass	se Developer	Responsible party is charged	0		App?	More general	Yes	38	
19 PM Set 37 Data Control User's rights for the User Developer Photo Control Developer the Notion defer ways for controlling user's data X Web nutline(Browser) Yes	3	38 Data Get	Multi Drivers/Pass	se User	Valuable infomation should be protected from hackers or rogue mechanics.	0		App/runtime(Browser)	More general	Yes	60	
37 Data Control User's rights for the User Developer should offer ways for controlling user's data O Cloud More rights for the User More regeneral Yes 52 25 Data Control User's rights for the User Data signification module data beto control depending on application. O App More general Yes 52, 53, 55, 50 25 Data Control User's rights for the User User's rights for the User User's rights for the User Yes 68, 15, 15, 12, 73, 64, 45 25 Data Control User's rights for the User User's rights for the User User's rights for the User Yes 68, 15, 19, 27, 364, 45 26 Data Control User's rights for the User Users candes for the User User's rights for the User Yes Yes 1 20 User 1D Instringtification Tipulation ProteClon against Divelation Yes Yes 1 31 User 1D Multi Divers/Passe Diversigner Roh passenger mut be deterfidible whom an optianed data beings for and the diversity for the User App? Yes Yes 45, 55, 50 32 User 1D Multi Divers/Passe Diversignee App and out optime in a genoral basis App? Yes 58, 55, 50 35 APP Cott Multi Diversification thout on obtained data beings for thout basis App? Yes 58, 55, 50 35 APP	1	18 API Set	Set API	Developer	HVAC can be "set".	х		Web runtime(Browser)	Yes	Yes	16, 18, 26, 42	
22 Data Control User's rights for the User Data Southor dispending on application O App More general Yes 6,8,15,19,27,38,44,55 23 Data Control User's rights for the User Southore So	3	37 Data Control	User's rights for th	ne User	Developer should offer ways for controlling user's data	0		Cloud	More general	Yes	58	
22 Data Control Users rights for the User Users rights for the User Web nufflexpress/parts Web nufflexpress/parts Yes 6, 8, 15, 19, 27, 30, 44, 55 15 AP Log Users rights for the User Users rights for the User Users rights for the User Web nufflexpress/parts Yes 6, 8, 15, 19, 27, 30, 44, 55 23 Data Control Users rights for the User Users rights for the User Users rights for the User Yes 1 23 Data Control Users rights for the User Users rights for the User Web nufflexpress/parts Yes 1 30 User ID Multi Dirvers/Passa Disexploger Ench passarger mut be elementation 2 App? Yes Yes 5, 5, 50 31 User ID Multi Dirvers/Passa Disexploger Ench passarger mut be elementation 2 App? Yes Yes 5, 5, 50 32 User ID Multi Dirvers/Passa Disexploger Ench passarger mut be elementation 2 App? Yes Yes 5, 56 33 LV IDE Multi Dirvers/Passa Disexploger Ench passarger mut be elementation 2 App? Yes Yes 5, 56 35 LPI Cott Multi Dirvers/Passa Disexploger App and participant	2	25 Data Control	User's rights for th	ne User	Data destination should be able to control depending on application	0		Арр	More general	Yes	27, 39, 44	
15 APU cg Users on their bulker Users on their bulker Users on the form the Users Users on the form the Users Web numme@rowsen Yes Yes 23 30 Dia Confro Users on the form the Users Web numme@rowsen Yes Yes <t< td=""><td>2</td><td>23 Data Control</td><th>User's rights for th</th><td>ne User</td><td>Users should be able to control data set and data granularity depending on application.</td><td>?</td><td></td><td>Web runtime(Browser), App?</td><td>More general</td><td>Yes</td><td>6, 8, 15, 19, 27,</td><td>39, 44, 55</td></t<>	2	23 Data Control	User's rights for th	ne User	Users should be able to control data set and data granularity depending on application.	?		Web runtime(Browser), App?	More general	Yes	6, 8, 15, 19, 27,	39, 44, 55
22 Data Control Users rights for the User Users and cash he data from the car. 0 Should be implemented in a general way, like browser (need) Web nument@towsen() Yes Yes 1 30 User ID Photchina gained the data from the car. No user can log in on system during during: No	1	15 API Log	User's rights for th	ne User	User can check log and remove it.	0		Web runtime(Browser)	Yes	Yes	23	
30 User ID Prodiction agains (Developer) Nouse can log into system during driving. ? need architecture discussion Web numer(Browser), App? More general? Yes 50 31 User ID Multi Drivers/Passe (Developer Each passenger must be identifiable. X App? Yes Yes \$5, 50 35, 50 35 35 36 35 36 36 35 36	2	26 Data Control	User's rights for th	ne User	Users can clear his data from the car.	0	Should be implemented in a general way, like browser reset.	Web runtime(Browser)	Yes	Yes	1	
31 User ID Multi Driver#Passe/Develope Each passinger must be identifiable. X App? Yes Yes S5. 50 32 User ID Multi Driver#Passe/Develope In multi be identifiable whom an obtained data belongs to. X App? Yes Yes 95. 33 User ID Multi Driver#Passe User Apps anduat operation anduated data belongs to. X App? Yes Yes 15.3 35 User ID Multi Driver#Passe User Apps anduat operation anduated data belongs to. X Approximation anduated data belongs to. Yes Yes 15.3 56 36 APP Cet Users inglistic frieth User Sensitive Constraint Anduated data belongs to. X unitime Yes Yes 56	3	30 User ID	Protection again	s Developer?	No user can log into system during driving.	?	need architecture discussion	Web runtime(Browser), App?	More general?	Yes	50	
32 User ID Multi Drivers/Passe/Beveloper It must be identifiable whom an obtained data belongs to. X App? Yes Yes 15, 34 35 User ID Multi Drivers/Passe/User Apps should operate in a personia basis O Approximation (Billowser) More general Yes 56 36 APP Cet Users's inghts on throw flow for the sense in the common should not be known by apps X runnine Yes' Yes 57	3	31 User ID	Multi Drivers/Pass	se Developer	Each passenger must be identifiable.	х		App?	Yes	Yes	36, 35, 50	
35 Uer ID Multi Dhver#Dass User Apps should operate in a personal basis O Applicating@ovsep) More general Yes 56 Ues ng miss for the User Sensitive Count on budy of the Norm by apps X Unifine Yes? Yes 57	3	32 User ID	Multi Drivers/Pass	e Developer	It must be identifiable whom an obtained data belongs to.	х		App?	Yes	Yes	15, 34	
36 API Get User's rights for the User Sensitive location should not be known by apps X nuntime Yes? Yes 57	3	35 User ID	Multi Drivers/Pass	se User	Apps should operate in a personal basis	0		App/runtime(Browser)	More general	Yes	56	
	3	36 API Get	User's rights for th	ne User	Sensitive location should not be known by apps	х		runtime	Yes?	Yes	57	

No Category	Requirement	Feasibility	Comment	Responsible module	Vehicle Spec topic?	Security or Privacy requirement?	How to treat	Use case No.	
1 API	Automakers expose a subset of Vehicle API to developper	?	Is not_supported_business_policy enough	Web runtime(Browser)	Yes	Yes	nothing to do	29	
2 API	Automakers expose API only for specific applications(website)	?	Is restriction based on whitelisted-hostnam	Web runtime(Browser)	Yes	Yes	nothing to do	3	
3 API	There must be a way to verify application ID.	?	Is ssh enough for this purpose?	SSH?	More general	Yes	nothing to do	9	
4 API	Any API restriction should be ignored if an emergency arise.	0		Web runtime(Browser)	Yes	Yes	note for impleme	5, 21, 40, 41, 43	
5 API	Users should be possible to restrict API depending on application.	0		Web runtime(Browser), App?	More general	Yes	note for impleme	27, 44	
6 API	API should be available even if engine is off.	х	need architecture discussion	Car server?	Yes	Yes	future spec	47, 45, 28, 34, 17,	25
7 API	API should be accesible remotely.	х	need architecture discussion	App?	Yes	Yes	future spec	17, 18, 25, 26, 28,	46, 47
8 API Get	"Get API" can be accesble only via an automaker's cloud server.	0	if so vehicle API doesn't need	Cloud	Yes	Yes	nothing to do	31	
9 API Get	Geo-location should be obtained.	?	Depend on sensor	Web runtime(Browser)	Yes	no	?	13, 37	
10 API Get	Weather around car should be obtained.	?	Depend on sensor	Web runtime(Browser)	Yes	no	?	19	
11 API Get	Camera image around car should be obtained.	?	Depend on sensor	Web runtime(Browser)	Yes	Yes	?	20	
12 API Get	Obtained data cannot be tampeted.	х		Hardware?, Web runtime(Browser)?	More general	Yes	future spec	4, 7, 10, 55	
13 API Log	Log should be accesible only by application which obtained the log.	0		Web runtime(Browser)	Yes	Yes	note for impleme	23	
14 API Log	Log should be protected is an emergerncy arise.	0		Web runtime(Browser)	Yes	Yes	note for impleme	21	
15 API Log	User can check log and remove it.	0		Web runtime(Browser)	Yes	Yes	note for impleme	23	
16 API Log	Log is not recorded if DNT is turned to be ON.	0		Web runtime(Browser)	Yes	Yes	note for impleme	15	
17 API Set	Only one application can use "Set API" simultaneousely.	?	How about background application?	Web runtime(Browser)	More general	Yes?	future spec	49	
18 API Set	HVAC can be "set".	х		Web runtime(Browser)	Yes	Yes	future spec	16, 18, 26, 42	
19 API Set	Sheet position, Window and lock can be "set".	х		Web runtime(Browser)	Yes	Yes	future spec	28, 34, 17, 25,	
20 API Set	Safety critical functionality (e.g. airbug) can be "set".	х	Even in the future this might have to be pro-	Web runtime(Browser)	Yes	Yes	future spec	11, 43	
21 API Set	Access to the drive-train must be prohibited in a clear way.	0		Web runtime(Browser)	Yes	Yes	note for impleme	2	
22 API Set	"Set API" should be accesible only via an automaker's cloud server.	0	Even in the future this might have to be ke	Cloud	Yes	Yes	nothing	31, 32	
23 Data Control	Users should be able to control data set and data granuality depending on application.	?		Web runtime(Browser), App?	More general	Yes	note for develope	6, 8, 15, 19, 27, 39	, 44, 55
24 Data Control	Application should respect DNT setting.	0		App	More general	Yes	note for develope	5	
25 Data Control	Data destination should be able to control depending on application	0		App	More general	Yes	note for develope	27, 39, 44	
26 Data control	Users can clear his data from the car.	0	Should be implemented in a general way,	Web runtime(Browser)	Yes	Yes	note for impleme	1	
27 Publicness	Automaker should have responsibility to comply with governmental regulations.	0		Web runtime(Browser)	Yes	Yes	note for impleme	13, 30	
28 Trusted Commu	n Application should be able to connect with external devices.	?	Is ssh enough for this purpose?	App?	More general	Yes	nothing to do	52, 54	
29 Trusted Commu	n Users should be able to have access to his content which is stored in cloud servers.	0	Is current web service enough for this purp	App?	More general	Yes	nothing to do	53	
30 User ID	No user cannot log into system during driving.	?	need architecture discussion	Web runtime(Browser), App?	More general?	Yes	?	50	
31 User ID	Each passenger must be identifiable.	х		App?	Yes	Yes	future spec	36, 35, 50	
32 User ID	It must be identifiable whom an obtained data belongs to.	х		App?	Yes	Yes	future spec	15, 34	

No	Security/Privac	Situation, Usecase of API	Name	Concern	Ref.	Reported by	Applies to Vehicle Info Spec	Remarks	Question	Examples	Reference	Sensitivity	Conclusive n	emarks	
	y/Both/Other														
		-													
	Privacy	Rent-a-car	data	data from the car when I leave.		Junichi)es	vehicles or split that into a separate use case		to synchronise contacts, read emails and browse the internet in the vehicle					
										In order to protect the user's personal information, including these contact					
										details and browsing history, the user may wish to erase any					
										themselves before returning the vehicle.					
-	2 Security	Driving	Vehicle remote control permissions	As a driver, I don't want any remote person to control my car (eg. speed,	25	i Junichi	yes	Fundamental question as to whether API will be used remotely.		As a driver I don't want anyone to control the vehicle besides me or the					
	8 Security	Application certification	OEM permission for	door lock etc.) As an OEM, I don't permit any	29	Junichi		Suppress specific values is a sub-case		vehcile with my consent. Since data is inherently valuable, the					
			API usage	application to use Vehicle API without my check.				(JH) I report this as a possible		data owner may not wish for data to be exposed to a third party without explicit					
								hoped and feasible.		include the vehicle owner, a third party app developer, tier 1 supplier or an					
										OEM. They may wish to block the data transmission to certain areas in order					
			B							to protect exclusivity rights, vehicle attribute data, privacy or security.					
	Security	insurance	black box insurance	As an insurer, I need to be sure that probe data is not tampered.		Junichi		(JH) to be sure this, hardware support is required. I think this is out of scope for current spec.		insurance) is an increasingly common method of actively monitoring a					
										person's driving style in order to calculate tailored insurance premiums.					
										This can be used to save drivers money and aid insurers' risk					
										essential to ensure that the system gives an appropriate indications of risk					
										and therefore cost. This method of insurance provides another					
										interest in maliciously affecting vehicle data for monetary gain.					
	5 Privacy	Do Not Track	"Do Not Track" except for in	I usually set "Do Not Track", but help me immediately after the accident.	15	Hira		(JH) DNT should be touched in the scope.	Should we have normal mode	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Further Discu	ssion		
			emergency						and emergency mode? Can						
									handle						
	5 Privacy	Probe data	Traceability of crowd	I am willing to provide vehicle data for	6	Hira		(JH) This seems as an application laver	situations? Granularity of	Data about my trip in appregate may					
			sourced data	traffic monitoring, but does not want a police officer to know my destination				topic.	data?	be given in consent, by my spcific driving behavior shoud not be held					
	Security	ADAS	Data integrity of on-	and the exact speed of my car. Advanced Driver Assistance System		Kevin		(JH) Is there a standard way for		against me. Monitoring of use of ADAS activation	https://www.w3.				
			board sensors	(ADAS) Controller accepts input from authorized onboard sensors		Gavigan		be too heavy requirements for the spec intolementers		could be useful to insurance companies or others interested in monitoring driving behavior like V2X	Advanced Driver Assistance System 28ADAS. 29 Controller accepts input from authorized onhoard sen				
	Privacy	Data Sharing	Context dependant	As a user, I'd like to apoly different data	6	Junichi		This may also apply to requirements in		applications for municipalitites The user may wish to dictate the exten	5015				
		-	data granularity	granularity depending on whom to send the data.				specific places (based on laws in different countries) or differing		to which data is distributed to third parties. An example of this would include traffic					
								resurctions across the OEMs. The general use case is the ability to control or set granularity of specific fields (e.o.		moude tranc mapping services which may call upon data throughout the driver's commute in order to anonecaste					
								timestamp, latilon, etc.)		the data for traffic services. An application designed for personal					
	Care i	Anderstee Cod 1	Identifi	Ability to average		Tel C T		(BD is solve to 1 and 1		tracking may wish to only provide data on request and after driver verification.					
	security	Apprication Certification	for third parties	Ability to query registry of trusted 3rd parties, retrieve identification mechanisms		red Guild		(JH) In order to reject apps from untrusted developpers? Can we utilize SSH certificate or connection?							
1) Security	ADAS	Data integrity of off board data sources	Advanced Driver Assistance System (ADAS) Controller accents input from		Kevin Gavigan		(JH) Usually, this is done by signning on data, JSON web token and the signalized			https://www.w3. org/auto/security/wiki/Use Casedil Ice Case				
			Jour College	authorized external source(s)				mecanisem could be a solution. (KG 4-Aug-15): In order for input to be			Advanced Driver Assistance System 28ADAS. 29 Controller accepts input from authorized external sou				
		1910	A.4. 5					authorised, identity of sender (at least) must be securely established.			roe 28s 29				
1	1 Security	ADAS	interfaces for ADAS	Advanced Driver Assistance System (ADAS) Controller sets safety critical controls when driving vehicle		Kevin Gavigan		(JH) Controling the driving system from webapps is too challenging at this moment			https://www.w3. org/auto/security/wiki/Use_Cases#Use_Case: Advanced_Driver_Arcitetance_Susteen_28ADAS				
				controls when anying relieve				(KCG 4-Aug-15) Prototype apps are being created to control vehicles			29 Controller_sets_safety_critical_controls_when_driving_v shicle				
								remotely, see e.g. http://www.landrover. com/experiences/news/jtr-remote-control							
1:	2 Both	Sharing	Personal journey	Driver and/or passenger(s) in car want		Kevin		(JH) Application layer topic			https://www.w3.				
			snaring privacy	(s) that are not in car		Gavigan		and privacy aspects. Need to mutually authenticate before two way			2For passenger.28s. 29 in car want to share journey with virtual passenger.				
								communication can be authorised and need to strongly encrypt communication			28s.29 that are not in car				
								to ensure privacy. Also, the implementation needs avoid storino/cachino/looping data where a							
1	Privacy	Sharing	Regulated journey	Required/regulated data sharing with		Ted Guild		hacker could access it later. (JH) Should the data collecter take this				probe data.			
		Regulation	sharing privacy	municipal, state, federal, government entities				into account? If so, this is a serverside topic.							
1.	Privacy	Sharing	Personal/regulated journey sharing	Vehicle owner/driver/passenger sharing with individual parties commercial or	6_12	Ted Guild		(AC) How does this differ from 12 and 13	?						
1	5 Privacy	Do Not Track	*Do Not Track*	personal When I turn DO-NO-TRACK on, I	6	Junichi									
		10000	setting logs no data	expect any of my activities are not monitored nor recorded.											
1	Security	HVAC Control	with IVI	climate control equipments as GUI and lets a user control it via touch screen.	42	12.1.6		(JH) For set functionality, we have 2 options: (1) Forbid completity, (2) Allow for HVAC or so. (2) seems very							
				(Even set API is not recommended)				challenging at this moment and I would say (1)							
1	' Security	Remote Control	Remote checking and control of	A user uses his smart devices to remotely check whether side windows	46	Data Spec 12.1.6		(JH) Required features are (1)waking up car (2)contacting with app on the car							
			vehicle windows	of his parked car are closed or not, and to send a request to the car for closing it if opened				and (3)closing the door. (1) is out of scope, (2) might be an application layer tonic. Perhans out of scope							
1	8 Security	Remote Control	Remote starting and beating	A user uses his smart devices to start bis car remotely, and turns beaters on	26	Data Spec		(JH) See 17.							
				to warm up the car inside before getting in the car.											
1	Privacy	Data Gathering	Crowd sourcing weather information	If users agree to provide vehicle information to the weather station,		Data Spec 12.1.6		RainSensor				Non-sensitive			
				information such as amounts of rain and ambient temperatures											
2	Other	ADAS Notification	Lane departure integration with IVI	IVI warns when the vehicle goes on another lane (Lane departure warning		Data Spec 12.1.7		laneDepartureDetection							
2	Privacy	Emergency	Accident testimony	function) IVI records the scene before and after		Data Spec		(JH) Perhaps, Application layer topic.							
2	2 Other	ADAS	recording IVI night vision	an accident (for insurance or testimony) IVI improves vision in the dark		12.1.7 Data Spec		(JH) Is it feasible by the current spec?							
2	8 Privacy	Logging	Driving events log	Driver would like to see log of		14.1.1		(JH) Perhaps, Application layer topic.							
2	Privacy	Logging	Driving events log	3rd party would like to see log of driving events				(JH) Perhaps, Application layer topic.	At a maintenance?						
2	5 Security	Remote Control	Remote unlocking	Driver would like to remotely lock/unlock vehicle	2 and 17			(JH) To be merged with 17	In proximity?						
2	Security	Remote Control	Remote starting and heating	Driver would like to remotely start vehicle and turn on/set heat or air	18	1		(JH) To be merged with 18							
2	Privacy	Owner's management	Subscription to	conditioner Vehicle owner subscribes to 3rd party				(Jill) Do we need a such as admin-					No problem.		
			remote vehicle health monitoring	monitoring of vehicle data and trouble codes to ensure vehicle is running in good health				mode?							
2	8 Security	Remote Control	Remote seat	Driver would like to configure seat	34										
2	9 Both	Data Access	Context dependant data availability	Automaker has acces to all data elements including elements such ar	3			(JH) How about providing different results for availableFor**/) method					User?		
				those relating to vehicle quality or operating data whereas application				depending on the origin of app? (AC) Merge with 8?							
3	Security	Regulation	Third party vehicle	Automaker has concerns around impact				(JH) Depends on which 'set'							
			regulations	compliance with emissions regulations due to 3rd party access to interact with vehicle systems.				runcionaines we will expose to apps							
3	Security	IVI as a service?	Data sharing via off- board	Automaker would only like to allow API to access data from their remote				(JH) Does it mean they don't need client side APIs?							
3	2 Security	Remote Control	Remote settings	servers not directly from car. Automaker only wants to allow remote				(JH) Perhaps, Application layer topic.							
			through off-board only	settings via cloud not by direct connection.											
3	s Privacy	user recognition & retention limitation	settings for multiple users	Ine car can have multiple users/owners. Automaker needs to know which	35, 36	Hira		(JH) Perhaps, Application layer topic. Is this feasible?					Hassenger's p	invacy	
				vehicle data belongs to whom to provide notice and choice to											
3	Privacy	Driving	Preemptive driver	users/owners Ted a tall driver of the family car	28	Ted									
			recognition and settings	approaches the car and the seat adjusts to his settings											
3	Pricacy	identity	Univer recognition	Current driver is identified.	33			(JH) I think application is responsible and API doesn't need to support this.							
3	Privacy	identity	Passenger recognition	Family is traveling in vehicle and all passengers are identified.	33			could be used for group oriented recommendation systems, individual screen showing movie preferences etc.							
								(JH) I think application is responsible and							
3	Other	Location Based	Location based	Vehicle travels from one country (e.g.		Paul		API doesn't need to support this. (JH) Perhaps, Application layer topic.							
			settings	US) to another (e.g. Canada), settings change to metric.											
3	security	r aynnent	payment	responsible party is identified and payment from their account is marke				(un) Pernaps, Application layer topic.							
2	Other	Notification	Contextual user	Could apply to any 3rd party vendor. Customer is alerted to low fire pressure				(JH) Perhaps, Application lawer tonic							
4	Privacy	Location Based Emergency	recommendations Driver medical	repair locations are recommended. Emergency responder is called to				(JH) Checking medical condition seems					PSAP? (Euro'	?)	
			records in emergency	accident, vehicle reports who is in the car and can report if there are existing				very hard.					,		
4	Privacy	Emergency	Airbag reporting in	Emergency responder is called to											
	Security		HVAC integration	are in car. Customer has the ability to set LP/AC		Paul									
-	Security	Emergency	with IVI Airbag deployment	controls. Airbag has deployed the event in	16			(JH) It is critical and shale he instate of							
		** **	recording	captured.				from infotainment or other apps.							

No	Security/Privac y/Both/Other	Situation, Usecase of API	Name	Concern	Ref.	Reported by	Applies to Vehicle Info Spec	Remarks	Question	Examples	Reference	Sensitivity	Conclusive re	marks
44	Privacy	Monitoring	Subscription to battery monitoring	Diagnostics application is monitoring battery voltage for the event where it drops below a specific voltage. Event monitoring.				Code samples/examples for how to use subscribe/unsubscribe to make this happen.					non-sensitive	
48	5 Security	Self Control	Weather monitoring for window control	Service monitors weather and checks if windows are open, they are closed.				(JH) Is it feasible? To realize this, some service must be awake even if car is parked.						
46	5 Secuirty	Remote Control	Remote checking and control of vehicle windows	Remotely close windows, sunroof, etc	17			(JH) It is better to list up what we want to controll remotely. What we saw so far are - windows, surroof, door lock - seat setting - air conditioner						
41	Other	Notification	Park brake remote alert	Driver/Owner is alterted that parking brake is not set		Qing An								
48	8 Security	Notification	Vehicle intrusion remote alerts	Driver/Owner is alterted that that intrusion in the vehicle		Qing An							out of scope	
49	9 Security	API Call	Multiple sources for set API	One "Set" API is only allowed to accept input from one source at one moment		Qing An							Further discuss	lon
50	Security	Remote Access	Inhibit remote	During the driving, prevent other users from login and controlling the vehicle		Qing An								
51	Privacy	Application Manage	Application logging	An application can only access the log		Qing An								
53	2 Both	Vehicle to Home integration	Vehicle cameras and sensors integrate with home alarm system	Sensor and cameras in the car are included in the set of sensors providing input to customer (and e.g. neiphours) home socurity authenticates on that need to mutually authenticate so that need to mutually authenticate so that customer's vehicle only provides input customer's vehicle only provides input system, but e.g. in future, a neighbourhood watch group could neighbourhood watch group could entered at		Kevin Gavigat	n							
53	8 Security	Vehicle to Home Integration	Vehicle media system scamlessly shares content with customers closed, home media system/server and devices	Media (including photes, videos, music (adapta to DRM) concernig) is unart advorses including their car and with offlite. Cload charge a gluera's draw of the cload of the cload of the cars assertisety view and japt their consecutives including their consecutives of the cload of the service that the user has content stored on can security their cload of the service that the user has content stored to be conserved and the security of the user has content stored to be conserved as consecutive the balance of the security of the user loggest in on the cload consecutive stored and the cload the cload consecutive stored and the cload consecutive stored and the cload consecutive stored and the cload the cload consecutive stored and the cload consecutive stored and the cload the cload consecutive stored and the cload consecutive stored and the cload the cload the cload consecutive stored and the cload consecutive stored and the cload the cload the cload the cload consecutive stored and the cload		Kevin Gavigat	n							
54	Security	Vehicle to Home integration	Vehicle informed by fridge in customer's home that customer needs to buy e.g. milk on journey home	Vehicle needs to trust that the input comes from the fridge in the customer's home and needs to establish identity of customer's fridge in order to trust input. Fridge should only communicate with customer's vehicle (and any other parties authorised by the customer) in part to protect customer's privacy.		Kevin Gavigar	n							NOT
55	5 Security	Vehicle to infrastructure (V2I,V2X)	Vehicle provides data about potholes etc to other vehicles and to body responsible for maintaining roads	Vehicle suspension sensors, froit facing cameras dic and decid damage to road surface (potholes, broken manholes, broken drain covers etc) and commanicate location and details of damage to other vehicles and to the local authority responsible for repaining roads. Vehicle needs to prove its identity to other vehicles and to local authority service so that input can be trusted.		Kevin Gavigar	n							Signed Data API
56	S Privacy	Application Manage	IVI apps for multi- user	IVI apps such as recommendation, reservation, shopping, pay-per-use service, etc., should operate in a personal basis, which means that apps and its API have to be changed by driverluser.		Hira								
57	r Privacy	Probe data (Location)	Protection of Sensitive Location	Consumer has some locations heishe does not want other people to know. (Home, religious site, specialized hospital, secret 3rd place, etc.)		Hira								
58	8 Privacy	Data Sharing	User's right of choice	Consumer has less right of choice for data elements, rectification and erasure of data.		Hira								
56	Privacy	Driving Context	Individual recognition	Individual can be presumed/recognized by driving context, seat arrangement, music selection etcin registered users		Hira			(JH) Shouldn't it	?				
60) Both	ID Theft	Protection of Sensitive Information	E-commerce from the dashboard for drivers' purchases of fast food, gas,etc. has been available. Cars become hackers' and rogue mechanics' target for identify theft (redit card numbers, home address, e-mail information and all the other personal details).		Hira								

N	Category	situation, usecase of API	Concern	Ref.	Rported by	Applies to Vehicle Info Spec	Remarks	Question	Scope ?	Examples	Reference
			As a user, I'd like to remove any private data				Perhaps consider broader shared use vehicles or split that into a separate use				
	1 Privacy	Rent-a-car	from the car when I leave.		Junichi	yes	case			See concern As a driver I don't want anyone to	
:	2 Security	Driving	As a driver, I don't want any remote person to control my car (eg. speed, door lock etc.)	25	Junichi	yes	Fundamental question as to whether API will be used remotely.			control the vehicle besides me or the vehicle with my consent.	
;	3 Security	Application manage	As an OEM, I don't permit any application to use Automotive API without my check.		Junichi		Suppress specific values is a sub-case				
	4 Security	Insurance	As an insurers, I need to be sure that probe data is not tampered.		Junichi						
4	5 Privacy	Do Not Track	I usually set "Do Not Track", but help me immediately after the accident.		Hira						
			I am willing to provide vehicle data for traffic monitoring, but does not want a police officer to							Data about my trip in aggregate may be given in consent, by my spcific driving	
4	6 Privacy	Probe data	know my destination and the exact speed of my car.	8	Hira			Granularity of data?		behavior shoudl not be held against me.	
			Advanced Driver Assistance System (ADAS)							Monitoring of use of ADAS activation could be useful to insurance companies or others interested in monitoring	https://www.v3. org/auto/security/wi ki/Use Cases#Use Case: Advanced Driver Assistance System _28ADAS, 29_Controller_acce pts_input_from_aut
	7 Security	ADAS	As a user, I'd like to apply different data granularity depending on whom to send the		Kevin Gavigan		This may also apply to requirements in specific places (based on laws in different countries) or differing restrictions across the OEMs. The general use case is the ability to control or set granularity of specific fields (e.g.			for municipalitites	ensors
ľ	8 Privacy	Data Sharing	data. Ability to query registry of trusted 3rd parties,	6	Junichi		timestamp, lat/lon, etc.)				
-	9 Security		retrieve identification mechanisms		Ted Guild						https://www.w3.
11	0 Security	ADAS	Advanced Driver Assistance System (ADAS) Controller accepts input from authorized external source(s)		Kevin Gavigan						ord/auto/security/wi ki/Use_Cases#Use Case: Advanced_Driver_ Assistance_System 28ADAS. 29 Controller_acce pts_input_from_aut horized_external_s ource_28s_29 https://www.w3
1	1 Security	ADAS	Advanced Driver Assistance System (ADAS) Controller sets safety critical controls when driving vehicle		Kevin Gavigan						https://www.ws. org/auto/securit/w/w ki/Use Cases#Use Case: Advanced Driver Assistance System _28ADAS, 29 Controller_sets safety_critical_con trols_when_driving yehicle
1:	2 Privacy	Sharing	Driver and/or passenger(s) in car want to share journey with virtual passenger(s) that are not in car		Kevin Gavigan						nttps://www.ws. org/auto/secutify/wi ki/Use_Cases#Use _Case: Driver_and. 25or_passenger. 28s. 29 in car want to share journey with h_virtual passenge _c28s. 29 that are not in _car
13	3 Privacy	Sharing	state, federal, government entities		Ted Guild						
1.	4 Privacy	Sharing	individual parties commercial or personal	C 10	Ted Guild						
1	5 Fill me!	Fill me!	Fill me!	me!	Fill me!		Fill me!				
11	High Level 6 Functionality		control equipments as GUI and lets a user control it via touch screen.		Data Spec 12.1.6						
1	7 Security	Remote Control	A user uses his smart devices to remotely check whether side windows of his parked car are closed or not, and to send a request to the car for closing it if opened.		Data Spec 12.1.6						
14	8 Security	Remote Control	A user uses his smart devices to start his car remotely, and turns heaters on to warm up the car inside before getting in the car.		Data Spec 12.1.6						
			If users agree to provide vehicle information to the weather station, many cars can be used to get weather information such as amounts of		Data Spec						
19	9 Privacy? High Level	Sharing	rain and ambient temperatures.		12.1.6 Data Spec						
21	0 Functionality	ADAS?	lane (Lane departure warning function)		12.1.7 Data Spec						
2	1 High Level	ADAS?	accident (for insurance or testimony)		12.1.7 Data Spec						
2	2 Functionality	ADAS?	IVI? improves vision in the dark Driver would like to see log of ADAS/driving		12.1.7						
2:	3 Privacy 4 Privacy	ADAS Logging	events 3rd party would like to see log of driving events					At a maintenance?			
2	5 Remote Control	Remote Control	Driver would like to remotely lock/unlock vehicle.	,				In proximity?			
2	6 Remote Control	Remote Control	Driver would like to remotely start vehicle and turn on/set heat or air conditioner	_							
ĺ			Vehicle owner subscribes to 3rd party monitoring of vehicle data and trouble codes to					e.g., from his			
2	7 Privacy	Owner's management	ensure vehicle is running in good health Driver would like to configure seat settings					home?			
21	8 Remote Control	Remote Control	remotely. Automaker has acces to all data elements including elements such as those relating to vehicle quality or operating data whereas application developer only has access to extend					really?			
2			Automaker has concerns around impact compliance with emissions regulations due to 3rd party access to interact with vehicle								
31	U Security		systems. Automaker would only like to allow API to								
3	1 Security?		access data from their remote servers not directly from car.								
3	2 Security?		via cloud not by direct connection. The car can have multiple users/owners. Automaker needs to know which vehicle data								
3	3 Privacy	user regconition & retention limitation	belongs to whom, to provide notice and choice to users/owners		Hira						
34	4 Personalization	Driving	Ted a tall driver of the family car approaches the car and the seat adjusts to his settings		Ted						
3	5 Identity	Identity	Current driver is identified.					Is his name required?			
			Family is travelling in vehicle and all				Could be used for group oriented				
3	6 Identity	Identity	passengers are identified. Vehicle travels from one country (e.g. US) to				screen showing movie preferences etc.				

N o Category	situation, usecase of	Concern	Ref	Roorted by	Applies to Vehicle Info Spec	Romarks	Question	Scope	Framples	Reference
38 Identity?	Payment	Driving across toll bridge the responsible party is identified and payment from their account is made. Could apply to any 3rd party vendor.		riponia by						
39	Notification	Customer is alerted to low tire pressure, repair locations are recommended.								
40 Privacy?	Emergency	Emergency responder is called to accident, vehicle reports who is in the car and can report if there are existing medical conditions								
41	Emergency	Emergency responder is called to accident, vehicle reports where airbags are in car.								
42		Customer has the ability to set HVAC controls.		Paul						
43 Privacy	Emergency	Airbag has deployed the event is captured.								
44		Diagnostics application is monitoring battery voltage for the event where it drops below a specific voltage. Event monitoring.				Code samples/examples for how to use subscribe/unsubscribe to make this happen.				
45 Remote Control	Remote Control	Service monitors weather and checks if windows are open, they are closed.								
46 Remote Control	Remote Control	Remotely close windows, sunroof, etc								

	Security Privacy
	Remote Access
Category	Identification