

# VEHICLE AUTOMATION FACTORS GROUP CHAIRMAN'S FACTUAL REPORT ATTACHMENT 6:

**Shuttle Import** 

Las Vegas, NV

**HWY18FH001** 

(62 pages)

US Department of Transportation National Highway

#### - DECLARATION-

Importation of Motor Vehicles and Motor Vehicle Equipment Subject to Federal Motor Vehicle Safety, Bumper and Theft Prevention Standards OMB No. 2127-0002 Public Law 100—562, 49 USC Chap. 301

CUSTOMS PORT CODE CUSTOMS ENTRY NO PORT OF ENTRY VEHICLE IDENTIFICATION NUMBER (VIN) NAKE OF VEHICLE 2017 ARMA DL3 VEHICLE ELIGIBILITY NO. (Box 3) REGISTERED IMPORTER NAME AND NHTSA REGISTRATION NUMBER (Required when Box 3 is checked) DESCRIPTION OF MERCHANDISE IF MOTOR VEHICLE EQUIPMENT ELECTRIC MOTOR VEHICL The vehicle is 25 or more years old or the equipment filem was manufactured on a date when no applicable Federal Motor Vehicle Safety Standard or Theft Prevention Standard was in effect. The vehicle or equipment does not conform to all applicable Federal Motor Vehicle Safety and Sumper Standards, but is being imported solely for the purpose of research, investigations, demonstrations or training, or compatible racing words a specially restricted that I will comply with the applicable restrictions on importers of such merchanciles as secardist in 49 CFR 51.1 and I will convict the Administrator with obscimentary proof of export or destruction not later than 30 days following the end of the period for which the vehicle has been admitted into the United States [591.5]]: ☐ 2A. The vehicle or equipment item conforms to all applicable Federal Motor Vehicle Safety Standards for the valuate does not conform solely because readily attachable equipment items that will be (or the valuide does not conform solely because resulty attentable eculprient terms that will ob-sthered by the device a to offered for sale to the first purchaser for purposes often than results are not attached), and Sumper and That Prevention Standards, and bears a certification label or tag to that affect permanently affixed by the original manufacturer to the vehicle or affixed by the manufacturer to the equipment item or to St delivery container in accordance with applicable National Highway Traffic Safeky Administration (NHTSA) regulations (591.5(b)). A Copy of NHTSA permission letter if the importants not an original menufacturer of motor vehicles (or a wholly owned subsidiary theroof) that are certified to conform to all applicable Federal Motor Vehicle Safety Standards (FMVSS). Use on the public roads must be authorized specifically Venicle Sately Standards (HMVSS). Use on the pulce roads mask be authorized speameary [5018 (£11) or (21); Importer's statement describing the use to be made of the vehicle or equipment item if the importer is an original manufacturor of motor vehicles (or a wholly owned subsidiary themsoft) state are certified to conform to all applicable FMVSS: If use on the public roads is an integral part of 28. The vehicle was certified by its original manufacturer as conforming to all applicable Canadan motor vehicle safety standards and its original manufacturer confirms that the vehicle conforms to all applicable U.S. Faderal Motor Vehicle Safety, Bumper, and Theil Prevention Standards (or that it conforms to all such standards except for the labeling requirements of Standards Nos. 101 and 110 or 120, and/or the specifications of Standards No. 103 relating to daytime running tamps), and the vehicle is not a safety employee motor vehicle, a repaired safetyage motor vehicle, and I am importing it for personal use [591.5(g)]. are consided to comprime as apparentle PMVSS: if use on the public reads is an integral part of the purpose for which the vehicle or equipment them is imported, the statement shall describe the purpose that makes such use necessary, state the estimated period of time during which use of the vehicle or equipment item on the public roads is necessary, and state the intended means of final disposition (and disposition date) of the vehicle or equipment item after completion of the purpose for which it is imported [591,6(f(3))]. Attachment: Copy of manufacturer's confirmation letter. The vehicle was not manufactured primarily for use on the public roads and thus is not a motor vehicle subject to the Federal Motor Vehicle Safety, Bumpo: and Theff Prevention Standards or the exparpment fear is not a system, part, or component of a motor vehicle and thus is not an elem of motor vehicle equipment subject to the Federal Motor Vehicle Safety Standards. (\$91.5(a)) The vehicle does not conform to all applicable Federal Motor Vehicle Safety and Bumper Standards but does conform to applicable Federal Theft Prevention Standards, but I am eligible to import a because NHTSA has determined that the model and model year of the vehicle to be imported is eligible for importation into the United States, and the vehicle is not a safetype motor vehicle or a reconstructed motor vehicle, and I have furnished a board which is affected to mode vehicle in the vehicle of the properties of the vehicle of Attachment: Importer's statement substantiating that the vehicle was not manufact the public roads, or that the equipment item was not manufactured for use on a mo-not an item of motor vehicle equipment. (591.6(a)) eigible for importation into the United States, and the ventories to its assingle institute ventor or a reconstruction motor vehicle, and I have Jurisable a book, when its attention is attention to this declaration, if an amount equal to 150 percent of the entered veloci of the vehicle as entermised by the Secretary of the Teasury I this Administrator of NHTSA determines that the vehicle has not been brought into conformity with all such standards within 120 days after importation, then I state that I will deliver such vehicle to the Secretary of Homeland Secretary for export, or abandon 4 to the United States The vehicle or equipment dem requires further manufacturing operations to perform to intended function, other that the addition of readily attachable equipment forms such as mirrors, wheris, or the and immassembles, or mirror finishing operations such as painting, and any part of such vehicle that is required to be marked by the Theft Prevention Standard is marked in accordance with that standard [591.5(e)] a. I have registered with NHTSA gursuant to 49 CFR Part 592 and such registration is not suspended and has not been ervoked; or
b. I have executed a contract or other agreement, which is attached to this declaration, with an imposter who has registered with NHTSA and whose registration is not suspended and has not been revoked (591.5(f)). Attachment: For a vehicla, a copy of the incomptete Vehicle Document, issued by the incomplete vehicle manufacturer, providing guidance on completing the vehicle so that it continues to all applicable Folders Motor Vehicle Safety Standards (FNVSS). For an equipment earn, a statement assued by the item's manufacturer dentifying the applicable FNVSS to which the item coes not conform and describing the lather manufacturing required for the tem to perform as intended Attachments: Copy of DOT Bond, and Copy of Contract with a Registered Importer, if applicable 1 The vehicle or equipment does not conform to all applicable Federal Motor Vehicle Safety. Bumper and Theft Prevention Standards, but is intended solely for export and is labeled for export on the vehicle or equipment dem, and the outside of any container of the vehicle or equipment dem, and the putside of any container of the vehicle or equipment dem bases a label or tag to that effect (S91.5(c)). The vehicle doss not conform to all applicable Federal Motor Vehicle Safety and Sumper Standards but in being imported solely for the purpose of show and display, and is talse that 1 still comply with all applicable excitations on importers of such vehicles as specified in 49 CFR 51.7 [561.3(j)] ☐ 10. The vehicle or equipment does not conform to all applicable Federal Motor Vehicle Safety, Bumper and Theft Prevention Standards, but I am eligible to import it because all of the following conditions The equipment item is subject to the Theft Prevention Standard and is marked in accordance with the requirements of 49 CFR Part 541 [59] 5(k)] east

a i am a nonresident of the United States and the vehicle is registered in a country other than the

United States, The vehicle does not conform to at applicable Federal Notor Vehicle Safety, Bumper, and Theit Prevention Standards, but I am etigible to import it because at of the following conditions exist a tiern a member of tine arms forces of a foreign country on assignment in the United States, bill am importing the vehicle on a temporary besis, and for my personal ties, c. I will not set the vehicle to any person in the United States, other than a person displie to import a vehicle under this paragraph.

I will expert the vehicle upon departing the United States at the conclusion of my tour of duty, and e. I have attached a copy of my official orders [591.5(h)(2)] United States,

I ammemorally importing the vehicle for personal use for a period not to exceed 1 year, and wall 12, not sell it during that time, and

I will export it not later than the end of 1 year after entry, and the declaration contains my passport number and country of issue [591.5(d)] Country of Issue The vehicle does not conform to all applicable Federal Motor Vehicle Safety, Bumper, and Thefi Pravention Standards, but I am eligible to import it because all of the following conditions exist. Attachment: Copy of Official Orders a I am a member of a foreign government on assignment in the United States, or a member of the Secretanat of a public international organization so designated under the international Organizations immunates Act, and within the class of persons for whom the entiry of motor vehicles has been authorized by the Department of State.

b. I am immortang the vehicle on a temporary basis for my personal use, and will register it through the Office of Foreign Missions of the Department of States.

c. I will not set the vehicle to any person in the United States, other than a person eligible to import a vehicle under this paragraph.

c. I will not set the vehicle of Foreign Missions of the State Department, before departing the United States at the conclusion of a tour of duty, an ownership title to the vehicle good for expart only, and Attachment: Copy of Official Orders
The vehicle does not conform to all appsicable Federal Motor Vehicle Safety and Bumper Standards, but does conform to applicable Federal Theit Prevention Standards, and I am eigible to import it escause I am registered with NHTSA pursuant to 49 CFR Part 592 and such registration is not suspended and has not been revelved. I have informed NHTSA that is relied to petition, or I have petitionaid, that againty to decide that the vehicle to be imported is eligible for importation, and NHTSA has granted may permission in writing to unipor the which for that purpose I the Administrator of NHTSA discresses my petition, or decides that the vehicle is not eligible for importation, or if I validation may potition or I late to submit a petition covering the vehicle writin 190 days from the date of exity, then I state that when I will deliver such vehicle, unless it is destroyed, to the Secretary of Homestend Security for export or abandon it to the United States, within 30 days from the date of the criminal state that within 15 days from the date that an intelled of that decision, I will furnish a bond, in an import equal to 150 percent of the entered value of the vehicle as determined by the Secretary of the Criefssory, unless the vehicle is destroyed, to ensure that I will bring the vehicle into conformity with all applicable Federal Motor Vehicle Safety and Bumper standards within 120 days from the date that the petition is grained, or will deliver the vehicle to the Secretary of Homeland Security for export, or abandon it to the United States. If the valued is destroyed, then I state that will furnish NHTSA with occumentary proof of that destions in writin 15 days from the date that it occurs. only, and e. I have attached a copy of my official orders (591.5(h)(1)) Name of Embassy: \_ Attachment: Copy of Official Orders. @ KEOUSNA. COM E.MAIL: TEL : Attachment: Copy of NHTSA permission letter CEL: IMPORTER'S ADDRESS (Street, City, State, Zip Code) NAME OF IMPORTER (Please type) 6053 W Century BLVD #900 LOSANGELES, CA, 90048 KEOLIS TRANSIT AMERICA, INC DECLARANT'S ADDRESS NAME OF DECLARANT (Please type) CARDOSO SAME JOSEPH DECLERANT SIGNATURE DECLARANT'S CAPACITY DATE SIGNED 8-3-12 CFO

Customs and Border Protection to identify the basis for importation into the United States and U.S. territories under the laws administered by the United States Environmental Protection Agency. For more information, please see www.epa-gov/otaq/imports/index.htm.

must also submit EPA form 3520-1 or 3520-21 to U.S

EPA Requirements: Importers of motor vehicles/engines and nonroad vehicle

— DECLARATION—
Importation of Motor Vehicles and Motor Vehicle Equipment Subject to

OMS No. 2127-0002

	RT OF ENTRY	CUSTOMS PORT CODE			ENTRY NO	ENTRY DAT	
	KE OF VEHICLE	ARMA DL3		EAR LOIT	VEHICLE IDENTIFICAT	TON NUMBER AIN)	
-	GISTERED IMPORTER NAME AND NHTS				ked)	VEHICLE EL	IGIBILITY NO. (Box 3)
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	apphoaple Federal Motor Vehicle Salety Standar		,	demons:	rations of training or compe	corted solely for the purpose	of research, investigations
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	attached), and Bumper and Their Prevention Sta effect permanently attitud by the original manufa	indards, and bears a certification latel or tag to the	at	Attachm			
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	onforms to all such standards except for the table or 120, and/or the spesifications of Standard No.	eling requirements of Standards Nos. 101 and 11 p. 105 relating to daysime running terriors), and th	0	the pu	Proose for which the vehicle or	equipment item is imported, the sarry, state the estimated period	a statement shall de seen a sha
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	but does conform to applicable Federal Their P because NHTSA has determined that the mode eligible for importation into the United States, as	el and model year of the vehicle to be imported		equipme	nt aem is not a system, part	or component of a motor vent Federal Motor Venicle Safety	n's and third is and an dam of
	reconstructed motor value, and I have furnished an amount equal to 150 percent of the entered with	td a bond, which is attached to this declaration, is slice of the vehicle as determined by the Secretar	n V	Attachm	ent: Importer's statement sub	stantiating that the vehicle was dem was not manufactures for	s not manufactured for use on
	of the Treasury. If the Administrator of NHTSA de- conformity with all such standards within 120 da	termines that the vehicle has not been brought will type after importation, then I state that I will get up	9	not an ite	m of motor vehicle squipmen	(591.6(a))	k use on a motor vehicle or is
	such vehicle to the Secretary of Hometand Secretary St. 23: 8), and that	urky for export, or abandon it to the United State	. 00.	TOTAL COST	other that the addition of readi	is further manufacturing opera by attachable equipment nems	LIPA SE PARAM SE AVIS
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	been ravoked (591 5(f))	whose registration is not suspended and has to	×.			the incomplete Vehicle Docum nice on completing the vehic	
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		y of Issue		C I AME UC	of sell the vehicle to any persons under this paragraph.	orary basis, and for my person or in the United States, other th	al use, an a person eligible to import
	The vehicle does not conform to all applicable	Federal Motor Vehicle Salety, Bumper, and Thai		d. I will ex	con the vehicle upon departs	g the United States at the con	clusion of my tour of duty, and
	Prevention Standards, but I am eligible to import	4 because all of the following conditions exist:			ent: Copy of Official Orders	and the state of the state of	
	<ul> <li>I am a member of a foreign government on as Secretariat of a public international organization</li> </ul>	on so designated under the International Organiza	- 013	The yello	de does not conform to ad app	cable Federal Motor Vehicle S	afety and Burneer Standards
	been authorized by the Department of State:	ersons for whom free entry of motor vehicles ha	•	because	conform to applicable Federal I am registered with NHTSA	Their Prevention Standards, pursuant to 49 CFR Part 592	and i am eighte to import it
	<ol> <li>I am importing the vehicle on a temporary bas the Office of Foreign Missions of the Department.</li> <li>I will not sell the vehicle to any person in the U</li> </ol>	ent of State.		pelitioned	I, that agency to decide that	I have informed NHTSA that the vehicle to be imported it	i retend to petition, or I have alcohole for importation, and
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	e 1 have attached a copy of my official orders. [5	91 5(h)(1)]		S PILES S	, senial, or whindrawal of my	pettion, as appropriate, or with ring the vehicle if the Admini	to atch add most aven DIS no
	Name of Embassy.			a bond, in	non I state that within 15 days I an amount equal to 150 perc	from the date that I am notified and of the entered value of the	of that decision, I wal furnish
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-1	: JAL	@ KEOUSNA. COM		for export	late the petition is granted, or it or abandon it to the United Si	and deliver the vehicle to the Se lates. If the vehicle is destroyed	cretary of Homeland Securey
11	EL:			MISAW	an accumentary proof of that	destruction within 15 days from	the data that it occurs.
C	EL:			Account	ent: Copy of NHTSA permission	on where	
	ME OF IMPORTER (Please type)		IM	PORTER:	S ADDRESS (Street, City.	State, Zip Code)	
	EOUS TRANSIT AT	MERICA INC	6	553 V	J. CENTURY P.	SLVD #900, Los	ANDELES, CA.
_	OSEPH CARDOSO		08	AMF	T'S ADDRESS	,	,
_	CLARANT & CAPACITY		DE	11.10	SIGNATURE		DATE SIGNED
					77		8-3-17
				_			



E-mail request to:

# TEMPORARY IMPORTATION OF A MOTOR VEHICLE OR EQUIPMENT UNDER BOX 7 ON THE HS-7 FORM

IMPORTER OF RI	ECORD Company: Keolis	Transit America I	nc.
Contact Person: Fr		E-Mail Ad	
Street Address: 60	53 W. Century Blvd. Su	uite 900	
City: Los Angel	es	State: CA	ZIP: 90045
Tel:		Fax: ()	
BROKER INFORM	MATION Company: RBI-US	SA Customs Serv	vices, LLC Filer Code:
Contact Person: R	ejean Bousquet	E-Mail Ad	dress:
Street Address: 200	), Eyam Hall Lane, Suite 23	6	
City: Apex		State: NC	ZIP: 27502
Tel:		Fax: ()	
VEHICLE/EQUIP	MENT INFORMATION Make	: NAVYA	Model: ARMA
Model Year: 2017	VIN/Equipment No.:		
PURPOSE OF IMP	ORT Show, pilot testing	, demonstration,	R &D, training
HIGHWAY USE Mile		is requested, state the nu	imber of miles and why it is required:
Note: Proof of expo		estroy under Customs S tted to this office not lat	er than 30 days following the end of the
For questions call: (202) 366-5291	U.S. Department of Transporta National Highway Traffic Safe 1200 New Jersey Ave SE, Wes Washington, D.C. 20590	ty Administration (NHTS	

NOTE: Approval permits importation for up to one year. If additional time is required, a request for an extension must be submitted in writing along with a copy of the prior approval letter no later than 30 business days before the expiration date. Extensions may be granted for a total of up to 5 years. If permission is sought for more than one vehicle/equipment, attach an addendum with year, make, model, and VIN/Equipment No. for each vehicle/equipment. All requests submitted to this office must allow 30 business days for determination. All sections of this form must be complete and submissions in writing must be legible (49 CFR Part 551.31). It is the importer's responsibility to make sure all Box 7 approvals are current with NHTSA. If the vehicle/equipment is to be imported for testing to one or more of the Federal motor vehicle safety standards (FMVSS), the application should identify the specific standard(s) and the name and address of the laboratory or other facility at which the testing will be performed.

importcertification@dot.gov



E-mail request to:

# TEMPORARY IMPORTATION OF A MOTOR VEHICLE OR EQUIPMENT UNDER BOX 7 ON THE HS-7 FORM

IMPORTER OF R	ECORD Company: Keolis	Transit Ame	erica inc	<b>).</b>	
Contact Person: Fr	ancis Julien	E-I	Mail Addre	ess:	J
Street Address: 60	53 W. Century Blvd. S				
City: Los Angel	es	State: C	A	_ <sub>ZIP:</sub> 900	45
Tel: (					
BROKER INFORM	MATION Company: RBI-U	ISA Custom	s Servic	es, LLC	Filer Code:
Contact Person: R	ejean Bousquet	E-	Mail Addr	ess:	
Street Address: 200	), Eyam Hall Lane, Suite 2	36			
City: Apex		State: N	IC	_ <sub>ZIP:</sub> _275	02
Tel: (					
VEHICLE/EQUIP	MENT INFORMATION Mak	ce: NAVYA		Mode	ı:_ARMA
Model Year: 2017	VIN/Equipment No	.: <u> </u>			
PURPOSE OF IME	Show, pilot testin	g, demonstr	ation, R	&D, train	ing
	Photos showing the veh	nicle/equipment	should be	attached.	
HIGHWAY USE Mile	Yes □ No If highway uses			ber of miles	and why it is required:
DISPOSITION OF	VEHICLE/EQUIPMENT   - I	_	ratama Crus		Date:
	rt or destruction must be subm e vehicle/equipment has been a		e not later	than 30 days	following the end of the
For questions call: (202) 366-5291	U.S. Department of Transport National Highway Traffic Sat 1200 New Jersey Ave SE, We Washington, D.C. 20590	fety Administration			

NOTE: Approval permits importation for up to one year. If additional time is required, a request for an extension must be submitted in writing along with a copy of the prior approval letter no later than 30 business days before the expiration date. Extensions may be granted for a total of up to 5 years. If permission is sought for more than one vehicle/equipment, attach an addendum with year, make, model, and VIN/Equipment No. for each vehicle/equipment. All requests submitted to this office must allow 30 business days for determination. All sections of this form must be complete and submissions in writing must be legible (49 CFR Part 551.31). It is the importer's responsibility to make sure all Box 7 approvals are current with NHTSA. If the vehicle/equipment is to be imported for testing to one or more of the Federal motor vehicle safety standards (FMVSS), the application should identify the specific standard(s) and the name and address of the laboratory or other facility at which the testing will be performed.

importcertification@dot.gov





# Autonomous Vehicle Testing Permit

Nevada Department of Motor Vehicles
ATTN: Director's Office
555 Wright Way
Carson City, Nevada 89711

For questions regarding the autonomous vehicle regulations, autonomous testing application process and/or consumer deployment please contact:

April Sanborn, Manager - Management Services & Programs Division

Thomas Martin, Management Analyst - Management Services & Programs Division

#### Introduction

The State of Nevada is excited to lead autonomous vehicle development by licensing qualified companies to test their autonomous vehicle technology on our public roads. However, it is crucial that autonomous vehicles permitted to test in the state do not create an elevated risk to the Nevada public. Because the safety of the public is always the Department of Motor Vehicles' (Department) primary concern, we require that all testing applicants articulate how they have combined competent autonomous technology and safe testing practices.

# **Application Submittal**

# **Application Approval**

Upon approval of the application, a test permit detailing the testing parameters and limitations will be provided by the Department. This test permit is \$101 (\$100 for testing permit; \$1.00 Technology Fee). The permit must be carried at all times in each vehicle that has been approved for testing in Nevada and presented to a peace officer upon demand.

Each vehicle must display the autonomous vehicle testing plates. A set of plates are \$21.00 per vehicle (\$12.00 Business Plate Fee; \$3.50 per plate Production Fee; \$0.50 cents per plate Prison Industry Fee; \$1.00 Technology Fee). Each test vehicle to be tested in Nevada must be listed on the application and proof of vehicle ownership and insurance must be attached. To add or remove test vehicles associated to the autonomous vehicle test permit, notify the Department by filling out the OBL326 (Application for Autonomous Vehicle Testing Permit). A new permit will be provided by the Department.

# **Testing Permit Renewal**

Your autonomous vehicle testing permit and testing plates will expire one (1) year from the date the testing permit was approved. To renew, complete the OBL326 (Application for Autonomous Vehicle Testing Permit) and submit to the Department thirty (30) days prior to the expiration date. Some changes may require additional documents or a drive demonstration please contact the Department for assistance. The renewal fee is \$101 for the autonomous vehicle testing permit and \$13 per set of testing permit plates for each vehicle that is listed.

# Letter of Authorization

The Letter of Authorization is required to be completed and filled out as part of the application process. This letter will specify the persons who are authorized to conduct business with the Department, on behalf of the autonomous vehicle test company. The department will not release documents to any individual not listed on this form as an "authorized agent."

# **Insurance Requirements**

As required by NRS 482A.060, prior to any person testing autonomous technology in this state you must submit proof of insurance or self-insurance, make a cash deposit or post and maintain a surety bond in the amount of \$5 million. If the insurance expires or becomes invalid for any reason, the testing permit will become invalid until updated proof of insurance is submitted. Be sure to submit the proof of insurance during the renewal of the testing permit to avoid delays.

# Nevada Testing Geographical and Environmental Types

The Department has classified all of Nevada's public roads into four geographic types. This section describes what the Department has determined to make these locations uniquely challenging for autonomous vehicles.

## Geographic Types:

#### Interstate Highways

Interstate highways are highways that are part of the federal interstate highway system and exhibit the following characteristics:

- 1. speeds of up to 80 MPH
- 2. ongoing road construction
- 3. infrequent pedestrian traffic and foreign debris
- 4. controlled access
- 5. high speed maneuvers and braking requirements
- 6. toll booths

#### **State Highways**

State highways are any US or SR highway (State Highways inside an urban corridor must have additional authority) and exhibit the following characteristics:

- 1. Speeds of up to 80 mph
- 2. Ongoing road construction
- 3. Possibility of pedestrian, bicycle, and livestock obstacles
- 4. Traffic control devices (such as stop lights and stop signs)
- 5. Downtown/mid-city congestion
- 6. Various non-controlled access points

#### **Urban Environments**

Nevada's Urban Environments exhibit the following characteristics:

- 1. High levels of pedestrian traffic
- 2. Traffic control devices (such as stop lights, stop signs, and school zones)
- 3. Frequent road construction or roadblocks and foreign debris
- 4. Variable speed controls
- 5. Metered and parallel parking
- 6. Speed bumps or physical speed control devices
- 7. Animals off leash
- 8. Children at play in the roadway
- 9. Commercial shopping centers
- 10. Intersections lacking traffic control devices

#### **Unpayed or Unmarked Roads**

Any road outside of a city that is not a State Highway or Interstate are considered Rural or Unpaved roads. Additionally, any roads found inside an urban environment which are unpaved or unmarked are considered part of this environment. Unpaved or Unmarked roads exhibit the following characteristics:

- 1. Degraded pavement quality or no pavement (dirt roads)
- 2. Inconsistent or nonexistent road markings
- 3. Moderate levels of pedestrian traffic and foreign debris
- 4. Children at play in roadways
- 5. Animals off leash
- 6. Unmarked intersections

## **Environmental Types:**

The environmental types you may apply for are:

- Night driving
- Rain
- Fog
- Snow/ice
- High crosswinds (gusts above 30mph)

Due to the unpredictability of weather conditions, environmental types may, at a later date, be added to the testing permit if the applicant certifies the technology can successfully and safely perform in these conditions.

# **Safety Practices**

Any autonomous test vehicle operating in autonomous mode <u>with</u> a human operator present in the vehicle must ensure the following:

- The driver is seated in a position which allows the operator to take immediate manual control of the vehicle.
- The driver is capable of taking over immediate manual control of the vehicle in the event of a failure
  of the automated driving system.

Any autonomous test vehicle operating in autonomous mode <u>without</u> a human operator present in the vehicle must be able to achieve a minimal risk condition.

"Minimal risk condition" as defined in NRS 482A, is a condition in which an autonomous vehicle operating without a human driver, upon experiencing a failure of its automated driving system that renders the autonomous vehicle unable to perform the dynamic driving task, achieves a reasonably safe state which may include, without limitation, bringing the autonomous vehicle to a complete stop.

If the technology is not able to achieve the minimal risk condition then a human operator must be present in the vehicle and ready to take control in the event of a failure of the automated driving system.

# **Combining Procedure & Technology**

Applicants must have in place the processes and procedures to mitigate the risk of any potentially underdeveloped technologies.

Additional documentation required for Department records:

A description of your autonomous technology and its capabilities

This does not need to be a fully technical description. This description should be written with a non-technical audience in mind.

The safety plan for testing on public roadways

In the safety plan, provide details on how your vehicle will handle any situations that could be considered hazardous. Also included in the safety plan needs to be the steps that will be taken to achieve the previously described minimal risk condition, if the technology were to encounter a failure.

Your plan for hiring and training the test vehicle operators

# **Accident Reporting**

Pursuant to NRS 482A, within 10 days of any accident resulting in personal injury or property damage that exceeds \$750 or traffic violation occurring while operating an autonomous test vehicle, the licensee must provide the Department with a report of the incident. The report must include a copy of any accident report or any citation.

# **Disabled Operators**

<u>Overview</u>: In July 2016, the Department of Motor Vehicles was successful in expanding their existing regulatory requirements for autonomous testing. The new testing requirements are **not intended** for companies with test drivers possessing a valid driver's license in the State they reside in. The new requirements are for test operators who would be required to apply for a "restricted" driver's license with the Department and do not currently hold a valid driver's license in any state due to a disability.

If the operator of the autonomous vehicle has been disqualified from driving due to a disability, then a restricted driver's license is required for the disabled operator to be able to operate the autonomous vehicle. The following restrictions will apply:

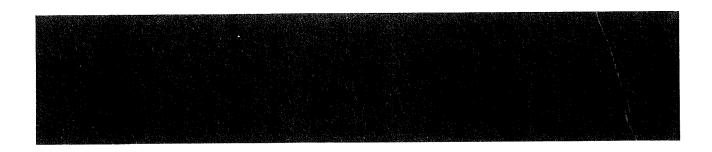
- A detail form is carried by the restricted license holder authorizing that holder to only operate the autonomous *test* vehicle with the technology engaged.
- The restricted license holder is **employed** by the company applying for this autonomous vehicle testing permit.
- A pilot vehicle, **supplied by the autonomous test company**, will be operated directly in front of the autonomous vehicle
- The restricted license holder must be accompanied by a second person that:
  - o Is seated in a position which allows the person to safely engage and disengage the autonomous technology and take active or physical control of the vehicle.

If, for any unforeseen reason, the above mentioned pilot vehicle is unable to continue to operate as such:

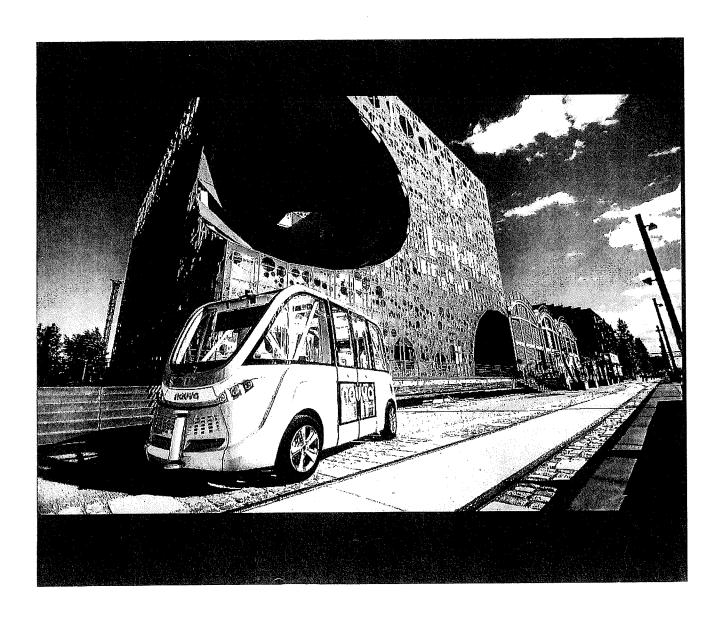
- The operator of the autonomous vehicle must pull the autonomous vehicle safely to the side of the road,
   or
- The second person in the autonomous vehicle must disengage the autonomous technology and take active or physical control of the vehicle.

If a restricted license, as mentioned above, is issued then the test permit applicant must provide proof to the Department that:

- The holder is an employee of the test permit holder.
- The holder has completed no less than 50 hours of training in an autonomous vehicle.
  - May include no more than 10 hours of operation of an autonomous vehicle simulator.
  - Must include no less than 40 hours of operation of an autonomous vehicle on any paved, graded, or similar surface, including a race track or private course
- Any other information the Department may request.



# A COUNTY



# **SUMMARY**

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## I - HIRING AND TRAINING OF THE OPERATORS

1 - Hiring

We will leave it to the local temporary employment agencies to propose to us the profiles for competent operators. Once the operators have been selected, we will train them to be able to respond to user questions as well as to technical and safety problems.

- 2 Steps of training
- 2.1 Presentation / questions and answers

To carry out their duties, the operators will need to know certain key words and a have minimum knowledge of the NAVYA ARMA company and product. For this purpose, we will provide them with a certain amount of information so that they can put together a presentation and communicate with the users.

See APPENDIX 1
See APPENDIX 2

2.2 – Technical and theoretical training

These instructions for use combine, for your convenience, information allowing you to:

- Know the vehicle, benefit from better conditions of use, and all the technical enhancements with which it is provided
- Keep in optimum operating condition by following the maintenance advice.

They comprise fundamental information for your safety and give you the most useful advices and assistance

Before using the vehicle for the first time, you must therefore carefully read through these instructions for use and familiarize yourself with them.

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2.2.1 - Important recommendations

#### In case of accident or impact:

In case of accident or impact on the chassis of the vehicle (example: contact with a bollard, a raised pavement or other street furniture), the electrical circuit or the traction battery may be damaged. Have your vehicle inspected by maintenance staff.

#### In case of fire:

In case of fire, leave and evacuate the vehicle immediately, contact the emergency services specifying that it is an electric vehicle.

If you have to take action, only use ABC or BC type extinguishing agents compatible with fires on electrical systems. Do not use water or other extinguishing agents.

#### Washing the vehicle:

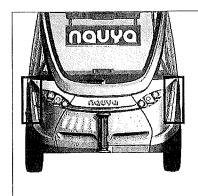
Never wash the traction battery with high pressure cleaner. There is a risk of damaging the electrical circuit.

Never wash the vehicle when it is powered or charging

2.2.2 - Batteries

#### 2.2.3 - Charge indicators

When the battery is being charged, the daytime running lights flash 1 to 4 times in succession every minute to indicate the charge level:



One flash:

0% to 25% charge

Two flashes: Three flashes: 25% to 50% charge 50% to 75% charge

Four flashes: 75% to 100% charge

#### 2.3 - Practical training

Any person (keeper, operator, technician) working on the vehicle must hold a valid driving license and be registered beforehand and trained by NAVYA.

Ensure that you are aware of all the safety instructions before pulling the vehicle into operation.

All operators will have practical training in handling the vehicle in autonomous and manual mode. The training is provided by a NAVYA employee.

#### 2.3.1 – Operating modes

The two operating mode of the vehicle are the following:

#### Manual Mode:

The operator steers the vehicle using a joystick.

This mode is useful for moving the vehicle outside the predefined route and to carry out maneuvering.

In manual mode, the safety channel of the vehicle is completely deactivated.

#### - Autonomous Mode:

The vehicle functions autonomously.

The operator monitors the operation of the vehicle and may, at any time, activate the emergency stop if a situation judged to be dangerous arises.

#### 2.4 – Emergency stops and incident management

2.4.1 – Use of the emergency stop buttons

The emergency stop buttons are permanently active, both in manual mode and in autonomous mode. Faced with a situation that is judged to be dangerous, the emergency stop of the vehicle may be activated by any person on board by triggering one of the two emergency stop push buttons situated inside the passenger compartment.

Triggering of one of the emergency stop buttons triggers a powerful emergency braking that immobilizes the vehicle in a few meters.

During an emergency stop, the level of deceleration of the vehicle is high. To prevent any fall on the board the vehicle, ensure that the passengers hold on tight throughout the journey.

2.4.2 - Putting the vehicle back into operation following an emergency stop

After immobilization of the vehicle following the triggering or one or more emergency stop buttons, it is necessary to:

- Rearm the emergency stop button(s) which have been triggered
- Reactivate the propulsion

In autonomous mode, resumption in manual mode is necessary to reactivate the propulsion of the vehicle. An operator must intervene to undertake this operation before relaunching autonomous mode.

2.4.3 - Incident management

#### 2.5 - Safety instructions

In manual mode, the operator is considered as the driver of the vehicle. The operator is responsible for their driving and any material damage or injuries caused. To do this, the operator must have the physical and mental capacity needed to drive a motor vehicle, and be in a physical and mental condition to drive throughout the duration of use.

The operator must always adjust the speed of the vehicle to the conditions and keep a safe distance. For safety reasons, driving the vehicle in manual mode must always be done from the passenger compartment.

2.6 - Pneumatic suspensions

See APPENDIX 6

#### 2.6 - Meteorological conditions

To guarantee the integrity of the various sensors, the operation of the vehicle must be interrupted if the outside temperature is less than -10 $^{\circ}$ C or greater than +50 $^{\circ}$ C.

For safety reasons, the operation of the vehicle must always be interrupted in case of bad weather (heavy rain, fog, ice, snow, frost, strong winds, etc.).

Where there is bad weather, it is also recommended to park the vehicle under shelter to avoid any damage to the equipment, windows or body elements.

If the recommendations on meteorological conditions are not met, NAVYA cannot be held responsible for any material damage or injury caused

#### 2.7 – Traffic conditions

The vehicle must only travel on private lanes within the site. The traffic lanes authorized for the operation of the vehicle will be defined in advance with NAVYA. All the authorized lanes must be suited to motor vehicle traffic (tarred or paved surface) so as not to wear out the vehicle prematurely. These lanes must be regularly checked and maintained.

If the carriageway is worn (roadworks, ice removal etc.) or in case of a dangerous obstacle on the carriageway (roadworks equipment, raised manhole cover etc.), the operation of the vehicle will have to be interrupted until the carriageway is effectively restored.

In case of alteration of the road system or horizontal (ground markings) and vertical (lights, signs) signaling on the site, the on-board mapping of the vehicle must be updated before resuming operation of the vehicle.

If the recommendations on traffic conditions are not met, NAVYA cannot be held responsible for any material damage or injury caused.

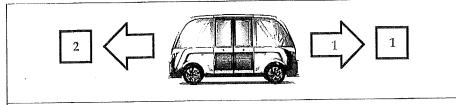
# II – OUR AUTONOMOUS TECHNOLOGY

1 – Technical sheet

See APPENDIX 7

2 – Direction of travel

The vehicle looks symmetrical and allows travel in both directions. The convention on direction used in the following:



- 1. Forward Movement
- $\quad \Leftrightarrow \quad \mbox{Opening the doors to the right in the direction of traffic}$ 
  - 2. Reverse Movement

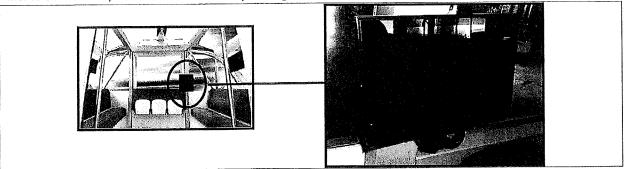
3 – Sensors architecture

See APPENDIX 8

4- Door system and emergency stop buttons

# 5 – Navigation touch screen

Inside the vehicle, a touchscreen allows passengers to select their destination.



6 – External communication

#### III - SAFETY DEVICES

- 1 Technical specifications of the NAVYA ARMA
- 1.1 Sensor architecture

The NAVYA ARMA shuttle has a sensor architecture designed to have optimal perception of the environment in which it operates. In order for an autonomous shuttle to move about in complete safety, it must be capable of locating where it is on its preprogrammed route and detecting and tracking obstacles (both static and dynamic) in order to optimize its behavior as a function of the environment. The perception sensor architecture is the result of many years of thought, testing and experimentation on the previous version of the shuttle (the V0). We have identified three levels of sensor integration: lower level (CB) (up to 30 cm above the plane of the road), middle level (CI) (50-120 cm) and upper level (CH) (> 220 cm). The new architecture consists principally of the following sensors:

Lower level (CB)	1 Sick 1 Lidar sensor covers the detection and tracking of ver close obstacles.		
Middle level (CI)	1 Sick 1 Lidar sensor covers the detection and tracking of close obstacles.		
	1 stereoscopic visual sensor for the detection and tracking of close obstacles and camera-driven positioning (under development).		
Upper level (CH)	1 VLP16 long-range (100 m) Lidar sensor covers the location and detection of obstacles.		
	1 stereoscopic visual sensor for the detection and tracing of distant obstacles, the recognition of traffic lights and visual positioning (under development).		
	1 RTK GPS for very precise positioning (centimeter level).		

#### 1.1.1 - Technical specification of the VPL16 Lidar

Rainfall	OK (reduced scope at 70%)
Snowfall	OK (reduced scope at 70%)
Fog	OK
Sun	OK
Night	OK

The Velodyne Lidar is placed at a vehicle height of 2.34 m on the back and front, tilted 15° downward from the horizontal.

#### 1.1.2 - Technical specification of the Sick LMS 151 Lidar

Rainfall	OK (reduced scope at 70%)
Snowfall	OK (reduced scope at 70%)
Fog	OK
Sun	ОК
Night	OK

The LMS151 sensors see at an average range that depends on the nature of the obstacle. They can detect a pedestrian at up to ~35m and an average-size car at up to ~45m forward and backward.

#### 1.1.3 - Technical specifications of the cameras

Rainfall	OK
Snowfall	OK (reduced scope at 70%)
Fog	Reduced scope
Sun	ОК
Night	Reduced scope

#### 2 – Obstacle detection.

We use a heterogeneous multi-sensor architecture for obstacle detection and tracking. Each sensor has its own technical and functional characteristics that permit it to perceive (or not perceive) certain types of obstacles. To illustrate the complementarity of the sensors, a stereoscopic camera makes it possible to see all types of obstacles (of different sizes and colors), but the distance estimation is not very reliable. Even with cameras equipped with HDR (high dynamic range) sensors, the latter are very dependent on the amount of light and the level of outdoor lighting. On the other hand, the lidars (VLP16 or Sick LMS151) are not dependent on lighting conditions and operate perfectly day and night. The lidars have the advantage of very precise distance measurement. One of the limits of these active sensors is their very poor resolution and point density.

We have developed and optimized algorithms that permit the detection and tracking of obstacles by the different types of sensors while taking into consideration the limits and uncertainties of each one. Data calibration and fusion have been implemented to validate the presence or absence of obstacles along the shuttle route. Information that characterizes each obstacle (position, distance, speed, trajectory etc.) is then sent to another module that makes suitable decisions to avoid the obstacles and adapt the behavior of the shuttles.

#### 3 – Localization system.

The shuttle positioning system is based principally on RTK differential GPS and two VLP16 lidars on the roof at the front and rear of each vehicle. Using the lidars, a SLAM 2D algorithm is developed that makes it possible to create a precise map of the environment. At each pass, each shuttle is positioned with respect to this pre-calculated map by resetting the lidar data on this map. In certain environments, the SLAM lidar algorithm does not converge due to the lack of environmental details (absence of characteristic structural elements etc.). This limit is dealt with by using the GPS, which contributes additional precise data on the centimeter-level position of the shuttles. The fusion positioning module handles all possible cases in order to assure good positioning and avoid lane departure, and to interact with the decision module in order to deal with the various loss-of-positioning scenarios (absence of network coverage or loss of GPS signal, defective lidar sensor, low-reliability lidar positioning etc.). During the setup phase when the vehicles are being prepared for deployment on a given route, we evaluate the amplitude of the GPS signals and the reception of GPS corrections by radio and 3G over the entire route. If there is insufficient network capability, NAVYA refers this insufficiency to the infrastructure manager to take the necessary actions.

#### 4 – General information

Thus, for the design and permanent development of these products, NAVYA applies basic security and operating safety principles. These principles are dictated by the harmonized European standards for applying Directive 2006/42/EC. However, these security and safety principles must be combined with sensible use of the machine and responsible and safe oversight.

#### 5 – Standard robotic chain & decisional robotic safety chain

The NAVYA ARMA shuttle is equipped with a total robotic system divided into two separate modules:

- The standard robotic chain
- And the decisional robotic safety chain.

The standard robotic chain makes it possible to carry out the following functions of the machine:

- Stop and start up.
- Mission planning.
- Travel speed control.
- Service braking control.
- Positioning, guidance and trajectory control.
- And obstacle detection using multi-sensor fusion (cameras, lidars).

The decisional safety chain is an independent safety system that is redundant and overrides the standard robotic chain.

The decisional safety chain is automatically activated:

- When a sudden (unanticipated) obstacle too close to the machine is detected.
- When a contact band on the lower panels is activated.
- When speed or acceleration greater than the required value is detected.
- When an emergency stop command is triggered.
- When the 72 V on-board electric power supply is cut off.
- When a malfunction of the safety or robotic or communication function is detected.

The decisional safety chain:

- Brakes the vehicle to a full stop while observing a maxim deceleration threshold of 3.5m/s2 in order to guarantee the safety of the passengers.
- Cuts off the 72 V on-board power network once the machine is stopped.
- Triggers the parking brake once the machine is stopped.
- And activates the machine's distress signals.

The decisional safety chain is a system whose performance level in terms of operational security is adapted to the evaluation of reasonably foreseeable risks associated with use of the vehicle.

#### 6 – Traceability and cyber security.

A continuous (24/7) local recording system is installed in each shuttle in order to backup all of the data coming from all of the sensors, the orders sent to the actuators and the status of the actuators. These data may be recovered and replayed in order to diagnose the operation of the vehicle in case of an incident or accident.

#### 6.1 - Supervision:

In addition, each shuttle is connected to its environment via the 3G network so that it can communicate with the supervision center. Certain data are forwarded to the supervision center in order to monitor the service in real time and make suitable decisions as needed (request to immobilize a vehicle, call for technical assistance for incident management as needed etc.). The data exchanged on the 3G between the shuttles and the supervision center are highly encrypted and pass through the VPN tunnel. The network architecture has been installed by the NAVYA engineers and we only use products approved by the National Data System Security Agency (ANSSI).

The supervision center is based in the Villeurbanne office and is operational 24/7.

# **SUMMARY OF APPENDICES**

APPENDIX 1: Presentation and information for operators

APPENDIX 2: Information about the shuttle NAVYA ARMA

APPENDIX 3: Batteries

APPENDIX 4: Manual mode

APPENDIX 5: Management of incidents by operating personnel

APPENDIX 6: Pneumatic suspensions

APPENDIX 7: Technical sheet

APPENDIX 8: Sensors architecture

APPENDIX 9: Door system and emergency stop buttons

APPENDIX 10: External communication

## **APPENDIX 1:**

# Presentation and information for operators

#### NAVYA ARMA

- The first autonomous production vehicle meeting the needs of first and last kilometer mobility
- Passenger vehicle
- Electric vehicles automatic-induction rechargeable batteries (8 to 13 hours)
- 100% automatic
- Safety, reliability, comfort
- Almost centimeter-level positioning
- Distinguishes fixed or moving objects both day and night
- Travels in all weather: rain, cold, heat
- The design reinvents the traditional image of a vehicle
- Capacity: 15 persons
- Non-polluting vehicle

#### **KEY NUMBERS**

- 70% of the world's population will live in cities by 2050 → Traffic saturation
- 30,000 hospitalizations can be avoided each year
- 80% drop in accidents by 2040

#### THE VEHICLE

How many people can it hold?

15 persons, 11 seated and 4 standing.

• If there is a problem, can the doors be opened manually?

Each door is equipped with a manual door release system that can be used in case of an incident.

How long can it operate autonomously?

Between 8 and 13 hours depending on heating and air conditioning use, the number of persons transported, the grades etc.).

The batteries recharge by induction once the ARMA has autonomously returned to its recharge station.

• Is it air conditioned and heated?

Heating and air conditioning systems are available.

• Specifically, how do the batteries recharge?

When this is necessary, the ARMA returns to is recharge base autonomously (like a robotic vacuum cleaner in your own home) and positions itself over a plate that transmits the power necessary to

recharge the battery by induction (a magnetic field transformed into electricity). It is also possible to recharge the battery using an electric cable on the shuttle that plugs into an ordinary electric outlet.

# • What happens if the vehicle breaks down? How is the maintenance organized? Who takes action?

The ARMA vehicles are equipped with a self-diagnosis system and can also be remotely interrogated. If there is a problem, the NAVYA personnel carry out a further diagnosis using a telecommunications link and send personnel to the operating site if needed.

#### Why this design? What did you intend to transport?

We particularly wanted to create a design for the ARMA that was attractive, reassuring and safe at the same time – necessary conditions for users to want to board it that will reduce certain concerns they might feel during their first trip in an autonomous vehicle.

The smooth flowing lines, the modern design, the bright interior of the vehicle and the robustness of the design are also advantages that permit the ARMA to better integrate into the overall traffic universe.

#### **LEGISLATION**

## • What about hackers? Is the computer system well protected?

The best security solutions have been implemented in the vehicle in order to assure safe operation. This prevention policy is particularly important during the communication phases between the supervision center and the vehicle. These are performed using an encryption system.

# • Who is responsible in case of an accident with another vehicle? With a pedestrian? What is your position today on that subject?

Today 90% of accidents are due to human error. Autonomous vehicles will dramatically reduce the number of highway deaths. A study by KPMG estimates that 30,000 hospitalizations can be avoided each year.

It is our responsibility to implement solutions that operate redundantly so as to maintain the maximum level of safety.

Conceptually, autonomous vehicles will reduce the rate of risk because they are not tired or sick or distracted by the potentially dangerous activities of human drivers (telephones etc.). And they don't drink or use drugs. Today all of these factors are the principal sources of accidents.

#### **USES**

#### Where can the vehicle operate?

At first on a closed circuit until legislation permits their use on the open road.

The first closed-circuit fleet has been installed in the city center of Civaux. Experiments on open roads were carried out in Bordeaux in October 2015. Other experiments are now being carried out in Switzerland and Australia.

#### How long has the Navya company existed?

The NAVYA company was established on June 1, 2014, through purchasing the assets of the Induct company, which had initially supported the autonomous vehicle project.

Today the company includes most of the team that initially conceived the project and has now attracted a number of talents to assemble a team of more than 50 highly qualified staff that are eager to offer the new NAVYA ARMA today.

# • Don't you think that there is a risk that the public will be resistant to the idea of getting into a shuttle without a driver?

Obviously the public feels apprehension about new technologies and new ways of living and moving about. We have to educate and evangelize and above all try things out.

For us, safety is a major element in the development of the NAVYA ARMA. Positioning, navigation and management of obstacles have all been considered in order to offer a problem-free trip. Remember that 90% of accidents are due to human error! It is up to humans to cross the psychological barrier and for us manufacturers to help them do that.

Moreover, all the experiments that we have conducted in real-world situations over the past four years have shown us that, once a legitimate period of apprehension has passed, the users endorse our transportation system.

A study has recently been carried out with personnel at a transport site who were transported for more than two weeks and we found a rate of satisfaction and endorsement of the concept exceeding 80%.

## **APPENDIX 2**

#### Information about the shuttle NAVYA ARMA

The NAVYA ARMA is a 100% electric and autonomous public transport vehicle. This driverless, intelligent and innovative shuttle may carry up to 15 people and travel up to 45 kph in complete safety, particularly on private sites.

The NAVYA ARMA provides innovative transport solutions to optimize journeys of staff, visitors and service providers on private sites. Depending on the legal framework, it may also be used in traffic on public roads – for vehicles and pedestrians – particularly to make transportation more fluid on the first and last kilometers.

Autonomous and flexible, the NAVYA ARMA does not need either a driver nor specific infrastructure.

Intelligent and reliable, it adapts to situations by detecting static and dynamic obstacles.

The operation of the NAVYA ARMA is based on three principles:

- Perception, which allows the vehicle to know where it is in space and detect potential obstacles in the surroundings.
- Decision, which estimates the dynamic behavior to be adopted from the perception, to perform its task well.
- Action, which translates instructions from the decision using actuators to move the vehicle.

## **APPENDIX 3**

#### **Batteries**

The vehicle has two types of battery

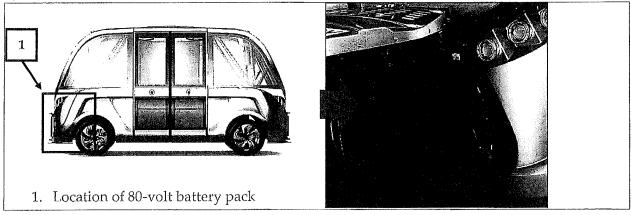
	80-volt traction battery	12-volt secondary battery
Chemistry	Lithium ion Phosphate (LiFePO4)	Lead (Pb)
Voltage	76,8 volts	12 volts
Capacity	216 Ah	44 Ah
Functions	Traction  Maintaining the charge of the secondary battery	12 volts on board network

The 80 Volts traction battery stores the energy needed to operate the electrical motor and to maintain the 12 Volts on-board network back-up battery. The rate of discharge of the traction battery depends on the conditions of use of the vehicle. The range varies, among other things, depending on the operating cycle: vehicle speed, number of passengers, slope of route, consumption of the on-board network, etc.

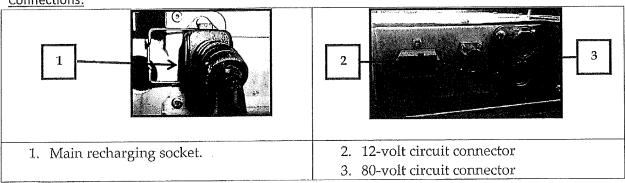
The recharging time varies depending on the charger connected and according to the type of connection: wall socket or induction socket

#### Location:

The 80-volt traction battery is situated under the rear bonnet of the vehicle. Opening the rear shell provides access to the battery system recharging plug.





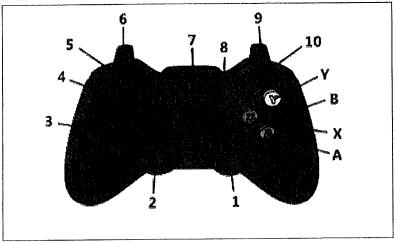


# **APPENDIX 4**

## Manual mode

#### **DRIVING IN MANUAL MODE**

To take control of the vehicle in manual mode, here is the control equipment and the various possible actions:



1: Steering joystick

2: Manoeuvre mode / drive mode

3: Propulsion joystick:

Up = forwards

Down = reverse

4: Left indicator

5: Opening and closing doors

6: Operator presence button

7: Button remote control On/Off

8: Right indicator

9: Emergency brake

10: Automatic Mode

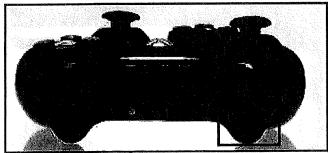
Y: Ø

B: Sleep

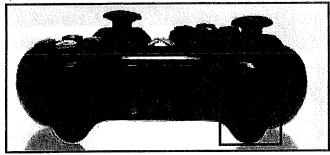
mode X:

#### **AUTOMATIC MODE**

By default, the joystick initializes in automatic mode. Press (6) to toggle to manual mode.



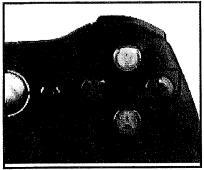
Hold down (6) and press (10) to return to automatic mode.



#### SEELP MODE/ACTIVE MODE

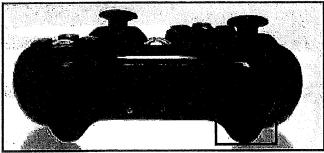
The 'Sleep' mode deactivates the propulsion. To authorize the propulsion, change to 'Active' mode by pressing (B).

Press (B) again to return to 'Sleep' mode'.



#### Operator presence button:

To operate the vehicle in manual mode, button (6) must be constantly held down. Releasing button (6) while driving instantly triggers braking to immobilise the vehicle...

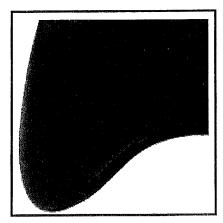


#### Driving Mode / Manœuvre mode:

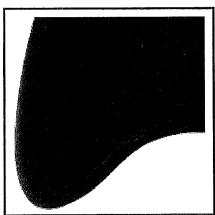
In manoeuvre mode, the speed of vehicle is set at 0.1 m/s.

To activate manoeuvre mode, press once on the down arrow of the control (2).

To deactivate manoeuvre mode and return to driving mode, press once on the up arrow of the control (2).



Activating manoeuvre mode



Deactivating manoeuvre mode

#### - Acceleration:

To accelerate while going forwards, tilt the propulsion joystick (3) up completely. To accelerate while in reverse, tilt the propulsion joystick (3) down completely.

In both cases, the vehicle accelerates constantly until reaching its maximum speed.



Propulsion joystick (3)

#### - Constant speed:

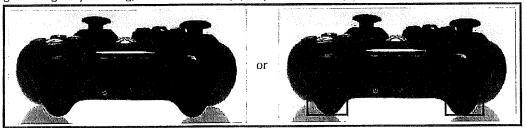
To maintain constant speed while going forwards, tilt the propulsion joystick (3) up half way. To maintain constant speed while in reverse, tilt the propulsion joystick (3) down half way.

#### Deceleration:

To decelerate (forwards or reverse), release the propulsion joystick (3).

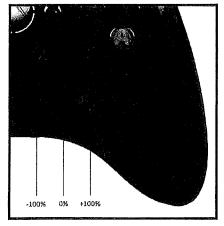
#### - Emergency brake:

To engage emergency braking, release button (6) or press button (9).



# **STEERING**

To steer the vehicle, progressively push the steering joystick (1) to the left (or right) to turn left (or right) in the directly of travel.



Steering joystick (1)

### Incident management by the operator staff

#### **PURPOSE:**

The purpose of this procedure is to set forth the provisions concerning management of incidents (minor and major) by the shuttle operator staff.

#### **DEFINITIONS:**

Contact person: Manager of the site who ensures the proper operation of the fleet.

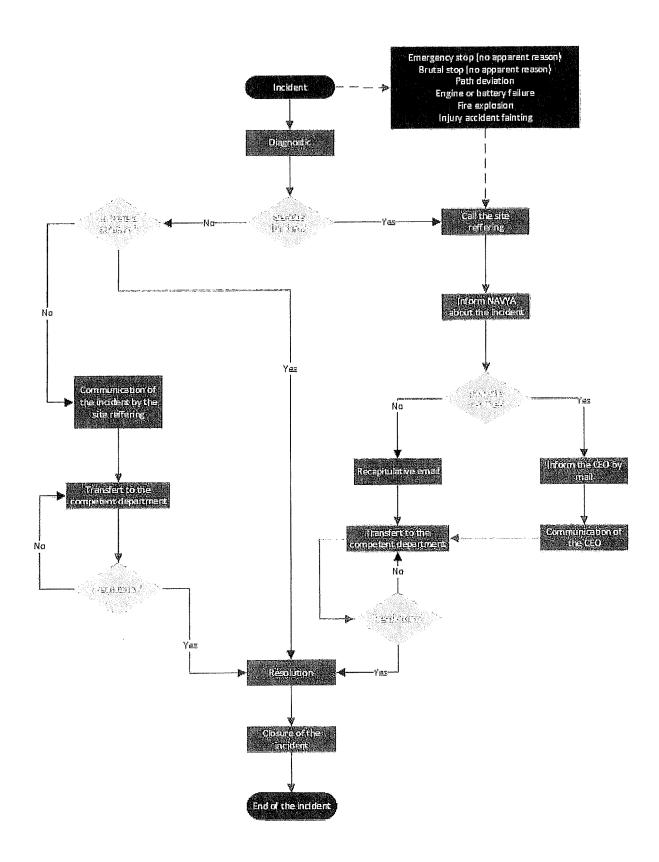
Operator: Action employee in charge of recharging the vehicle, checking and inspecting the vehicle before activation, deactivation, picking up passengers, safety and driving the vehicle in manual mode. Deployment manager: Navya employee in charge of managing the deployed fleets.

#### **DISTRIBUTION:**

SOURCE: Supervision cell

Quality file

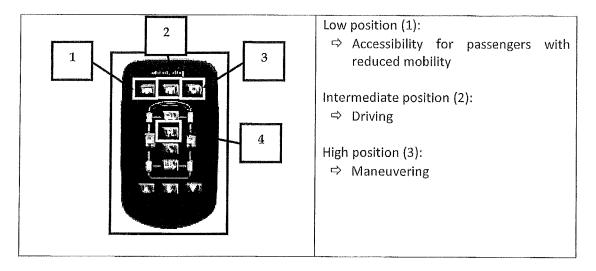
	What	Who	Where, when, how	Record
01	Diagnosis	Operator	The operator, given his or her experience with the shuttles, diagnoses the incident.	Note in the log following the attached form
02	Major incident?	Operator	The operator evaluates the seriousness of the incident.	N/A
02 a	Call to the site contact person or the supervisor	Operator Contact person	The operator contacts the site contact person or the supervisor's mobile phone and reports the key elements of the incident.	Telephone call
02 b	Is there a solution?	Operator	Given the diagnosis, the operator determines whether the incident can be resolved with the resources that he or she has available.	N/A
03	Report of the incident to the deployment manager	Contact person Depl. Mgr.	The site contact person categorizes the incident and notifies the Navya deployment manager.	Telephone call and high priority e-mail
04	Incident report by the site contact person	Operator Contact person Depl. Mgr.	The operator has no immediate possible solution. He or she contacts the site contact person in order for the company to take over. The contact person notifies the deployment manager.	Telephone call and e-mail
04 a	Does service have to be interrupted?	Depl. Mgr Navya CEO	The deployment manager notifies the CEO of the incident and reports the key elements that may lead to an interruption of service.	Telephone call and e-mail
05	Summary e-mail Navya and those involved in the project	Depl. Mgr.	The deployment manager sends an e-mail with the specifics of the incident in order to notify those involved in the project and the concerned Navya departments.	E-mail
05 a	Summary phone call and e-mail Navya and those involved in the project	Depl. Mgr.	The operations manager sends an e-mail with the specifics of the incident in order to notify those involved in the project and the concerned Navya departments.	Phone call and email
06	E-mail communication by the CEO for action	CEO Navya	The CEO sends an e-mail confirming the interruption of service (partial or total) and specifying the causes and the initial interruption period during which the company will conduct investigations.	E-mail to those involved in the project and Navya Probable activation of replacement service
06 a	Transfer to competent department	Depl. Mgr.	The deployment manager completes categorization of the incident and transmits all the key elements to the competent department(s) (R&D, production, headquarters) for investigation, analysis and resolution.	Telephone call and e-mail
07	Resolution	Navya dept(s). Operator Contact person	The cell in charge of the incident or the operator finds a solution. The action office takes the actions necessary to reestablish operation (partial or total). The contact person for the site will be involved if needed.	call and e-mail Updating of log
08	Incident closed	Navya Those involved in the project	Once the incident is resolved, the operation of the shuttles may resume.	Verification by responsible official Telephone call and e-mail Discontinuation of replacement service



#### **Pneumatic suspensions**

The vehicle is equipped with an oleo-pneumatic suspension system which allows you to adjust the height of the chassis.

The suspension remote control provided with the vehicle allows three preconfigured chassis heights to be selected.



#### Normal operation:

In normal operation, the remote control button corresponding to the selected position is backlit in continuous green.

#### Malfunctioning operation:

In case of malfunction (for example, if the suspension system does not reach the required height), the system goes into fault mode: the maintenance button (4) is backlit in flashing red and the three position buttons are backlit in flashing green. To correct the malfunction, press button (4) until all the buttons are illuminated, then press one of the position buttons.

# **Technical sheet**



Model:

arma

Capacity			
Passengers		15	
Standard configuration	Sitting	8	
· ·	Standing	7	
Configuration with folding seats	Sitting	11	
J J	Standing	4	



Dimensions		
Length	m	4,75
Width	m	2,05
Height	m	2,55
Clearance	m	0,20
Tyres		215/60 R17 (contact tyres)
Empty weight	kg	2100 à 2350 (according to equipment)
Gross weight	kg	3150 à 3400 (according to equipment)



Engine	2	
Drive wheels		
Engine		Electric
Power	kW	15 nominal (25 peak)
Maximum speed	km/h	45
Operating speed	km/h	25
Maximum slope	%	12



Energy		
Battery	A A A A A A A A A A A A A A A A A A A	Pack BatteryEVE System LiFePO4
Capacity	kWh	33,0
Charge duration	hours	up to 12
Autonomy	hours	from 5 to 13*
Charging technology		Induction / Plug
Charging temperature	°C	from 0 to +45
Operating temperature	°C	from -10 to +50



Direction		
Steering wheels		2x2
Turning radius	m	< 4,5



Equipment			
Reversible air conditioning (heating)	Automatic regulation**		
Doors	Double door wings		
Body	Fiber		
Glazing	Tinted glass		
Visual information	Inside 15 " touchscreen		
	Outside front and rear 28" screens		
Sound information	Stereo speakers		
Sound warning	Bell		
	Klaxon		
Safety	Safety belts (optionnal)		
	Glass-breaker hammer		
	Extinguisher (optionnal)		



Localization and obstacle detection		
Lidars 1	two 360° multi-layers lidars	
Lidars 2	four 180° mono-layer lidars	
Cameras	front/rear stereovision cameras	
Odometry	wheels encoders + Inertial unit	
GPS	GPS RTK (optionnel)	



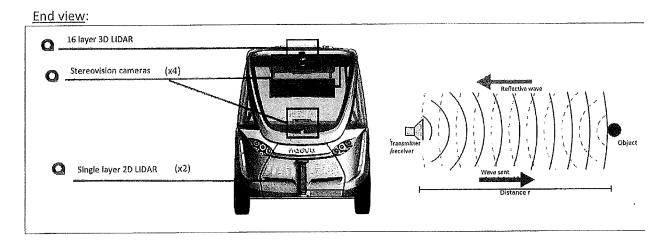
Security	
Emergency stop button	2 buttons
SOS intercom	1 button / via surpervision
Emergency break	Automatic

<sup>\*</sup>For information purposes only, non-contractual.

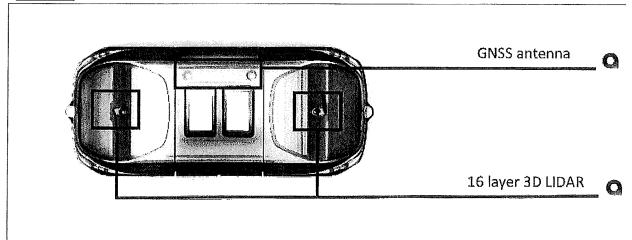
<sup>\*\*</sup> The removal of air conditioning in the series offer can be considered under certain conditions.

# Sensors architecture

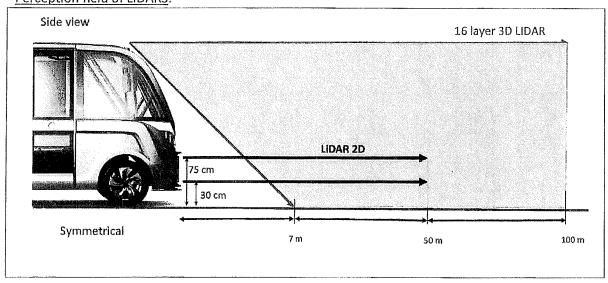
# GPS Inertial central system Gyroscopes Accelerometers Odometer



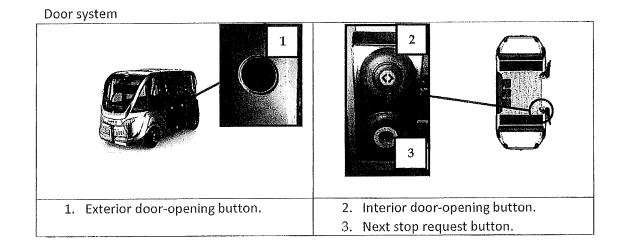
### Top View:



# Perception field of LIDARS:

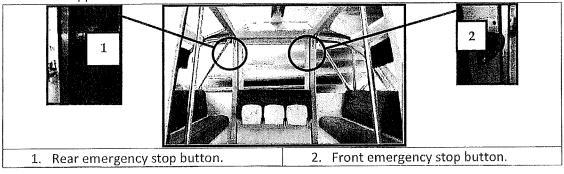


# Door system and emergency stop buttons



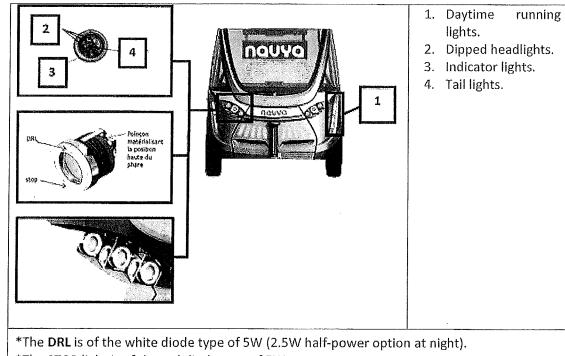
### Emergency stop buttons:

There are two emergency stop buttons in the vehicle situated on each side of the central backrest support.



# Exterior lighting and signaling

LED type headlights incorporate multiple functions operating in automatic mode. They are identical at the four corners of the vehicle:

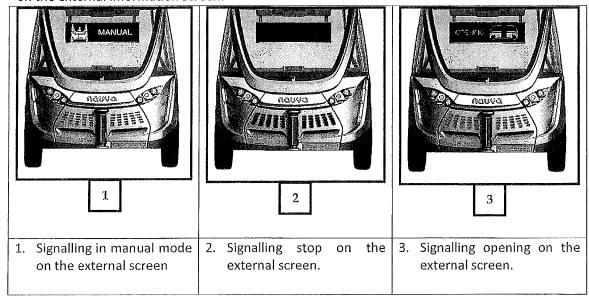


<sup>\*</sup>The STOP light is of the red diode type of 5W.

Efficiency: 100Lm/W

#### **EXTERNAL INFORMATION SCREEN**

During manual operations, opening and stopping the vehicle issues illuminated signals on the external information screen:



#### **AUDIBLE MESSAGES**

Electrical vehicles are particularly silent. This system allows those around to be warned in case of danger.

To do this, the vehicle is fitted with a horn and a buzzer.

# Our different experimentations

So far, we have had the opportunity to realize several demonstrations and experimentations of our autonomous shuttle. All those demonstrations helped us to progress and to gain experience.

Location	City	Country	Nature of site	Date(s) of Operation
Innorobo 2011	Lyon	France	Exhibition	from 23/03/2011 to 25/03/2011
Exhibition Ecomobiel	Rotterdam	Netherlands	Exhibition	27/09/2011 and 28/09/2011
Cybergo n°2 Preparation	Chauvigny	France		-
La Géode, Cité des Sciences	Paris	France	The Park	13/10/2011
Le château de Fontainebleau	Fontainebleau	France	Tourist Site	19/10/2011
DEFACTO - La Défense Forecourt	Puteaux	France	Pedestrian Downtown	8/12/2011 and 9/12/2011
Demonstration to France 2 TV channel	Laval	France		01/12/2011
Inov'dia 2011, 42e RT site	Laval	France		08/12/2011
OXIS ENERGY, Culham Science Center	Abingdon	United-Kingdom	Innovation center	26/01/2012 and 27/01/2012
Final Super Bowl 2012, Indianapolis Motor Speedway	Indianapolis	United-States	Speedway	05/02/2012
University UWF	Pensacola	United-States	Campus	09/03/2013
Innorobo 2012	Lyon	France	Exhibition	14/0/3/2012 and 16/03/2012
Kassel City	Kassel	Germany		27/03/2012
Pôle Santé Sud	Laval	France	Hospital	29/02/2012
Pôle Santé Sud	Le Mans	France	Hospital	18/04/2012
EPFL Lausanne	Lausanne	Switzerland	Campus	05/05/2012
Disney	Orlando	United-States	Theme Park	24 / 28 / 29 / 30 / 31 May 2012
Gulf Power	Pensacola	United-States	Industrial site	27/06/2012
Traffic Engineering Research Lab	Tallahassee	United-States	Innovation Centre	13/08/2012
CEA - Journée véhicules propres	Grenoble	France	Industrial Site	20/09/2012
Rue de la République	Lyon	France	Pedestrian Downtown	2013
CATS Project - Strasbourg	Illkirch	France	Pedestrian Downtown	2013
CATS Project - EPFL Lausanne	Lausanne	Switzerland	Campus	from 7/07 to 31/07/2014
Experimentations in NEC	Singapore	Singapore	Innovation Centre	2014
Swamp Forest Route	Singapore	Singapore	Innovation Centre	2014
Bipolis Street	Singapore	Singapore	Road	15/08/2014
Sentosa	Singapore	Singapore	Theme Park	14/11/2014
University of Valenciennes	Valenciennes	France	Campus	March 2015
GreenFest Event	Singapore	Singapore	Campus	23/03 and 24/03/2015
Demonstration Circuit of Confluence	Lyon	France	Circuit	17/03, 8/04,16/04, 21/04, 23/04, 27/05 and 3/06/2015
Demonstration in Quai Rambaud	Lyon	France	Pedestrian Downtown	27/05 and 03/06/2015
NTU Innovation Centre	Singapore	Singapore	Campus	28/05/2015
Gateway Project	Greenwich	United-Kingdom		2015

Oxis	Abingdon	United-Kingdom	Industrial Site	03/06/2015
EDF Nuclear Plant	Civaux	France	Nuclear Plant	from 22/06 to 3/07/2015
Cleantech One	Singapore	Singapore	Business Park	2015
ITS Bordeaux	Bordeaux	France	Exhibition/open road	from 5/10 to 10/10/2015
Passenger Terminal Expo 2016	Cologne	Germany	Exhibition	from 15/03 to 17/03/16
EDF nuclear plant	Civaux	France	Nuclear Plant	from 17/03 to today
URBACCESS	Paris	France	Exhibition	22/03 to 23/03/2016
Klinikum Chemnitz	Dresden	Germany		03/05/2016
CentrO	Dortmund	Germany	Commercial center	06/052016
Park der Garten	Bremen	Germany	Exhibition	10/05/2016
Kur Park	Dangast	Germany	Exhibition	12/05/2016
Deutschen Transport Ministerium	Leipzig	Germany	Exhibition	18/05 to 20/05/2016
Tunnel of Saint Gothard	?	Switzerland	Exhibition	04/06 to 05/06/2016
ITS Glasgow	Glasgow	UK	Exhibition	06/06 to 09/06/2016
Public Transport	Paris	France	Exhibition	14/06 to 16/06/2016
Sion	Sion	Switzerland	Open road/pedestrian downtown	23/06/2016 to today
RAC	Perth	Australia		

Our first demonstrations and experimentations allowed us to cover **10 000** kilometers and transport **15 000** persons. Now, thanks to our two principal deployment areas (Civaux and Sion), we have a total of:

• Kilometers: 19 200

• Transported persons: 26 300



Occupational and Business Licensing
555 Wright Way
Carson City, Nevada 89711
(775) 684–4690
www.dmvnv.com

### APPLICATION FOR AUTONOMOUS VEHICLE TESTING PERMIT

Application Type:		Permit Number	
New Renewal Change (Type of change):	□ Vahislas □ Con	·	v applicant, please leave blank)
<ul><li>☐ Address</li><li>☐ Geographic Types</li></ul>	☐ Vehicles ☐ Con ☐ Environmental Types	npany Information	
Business Name: KEOUS TRAN			
Mailing Address: 6053 W. CENT	JRY BLUD # 900 1	LOS ANGELES	CA 90045
Mailing Address: 6053 W. LENTO Street  Physical Address: 6053 W. LENTO Street	URY BLUD # 900 L	os Anótles city	<u>CA</u> 900 45 State Zip
Business Telephone Number:		Business Fax Number	r: <u>310 - 981 - 9501</u>
Email address:		FEIN: 90-08	19895
☐ Sole Proprietorship ☐ Partnership	☐ LLP X LLC ☐ Corporation	on Incorporated	in State of <u>Californiu</u>
List name and title of each individual, stockholder participating in the direction additional individuals, if necessary. Cha	, control or management of the	policy of the project.	
Name (Last, First, Middle)	-1110000000000	Title	Contact Telephone Number
Joseph CARDOSO		CFO	
Steve SHAW		CEO	
Susan HERLICK		General Counsel	
Registered Agent Information:			
Name	Address	1 Helio	Telephone Number
Joseph CARDOSO	6503 W. Century Blv Los Angeles CA	a #400 90045	1
Licensed Operators:	,		
Name	Driver's License Number	State	Issued
Francis JULIEN			



Occupational and Business Licensing
555 Wright Way
Carson City, Nevada 89711
(775) 684–4690
www.dmvnv.com

# APPLICATION FOR AUTONOMOUS VEHICLE TESTING PERMIT

Application Type:		Permit Number	applicant, please leave blank)
<ul><li>✓ New</li><li>☐ Renewal</li><li>☐ Change (Type of change)</li></ul>	1	(ii new	applicant, please leave diality
<ul><li>☐ Address</li><li>☐ Geographic Types</li></ul>	<ul><li>☐ Vehicles</li><li>☐ Environmental Types</li></ul>	mpany Information	
Business Name: KEOLIS T	RANSIT SERVICES, U.C.		
Mailing Address: 6053 W	Century Blvd #900 L	os Angeles	<u>CA</u> 90045 State Zip
Physical Address: 6053 W.	Century Blvd #900 L Century Blvd #900 L	os Angelos	CA 90045 State Zip
Business Telephone Number:	<u> </u>		: <u>310 - 981 -9501</u>
Email address:		FEIN: 90-081	9895
☐ Sole Proprietorship ☐ Partne	ership	on Incorporated i	n State of California
stockholder participating in the di	vidual, each partner, whether genera rection, control or management of the v. Changes require notification to the D	e policy of the project.	rincipal officer, director or Use separate page to list
Name (Last, First, Middle)		Title	Contact Telephone Number
Francis Julien		General Managar	
Registered Agent Information:	Address		Telephone Number
Soseph CARDOSO	6503 W. Centry & Los Angeles CA	8\vd #900 90045	Telephone Number
Licensed Operators:	0		
Name	Driver's License Number	State I	Issued
Francis Julien			
			:

#### Autonomous Test Vehicle Information: (A \$21 fee for each set of new Testing Permit Plates is required)

Year Make 2017 NAUYA	Vehicle Identification Number (VIN)											
2017 WAUYA												
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As a Nevada Autonomous Vehicle Testing Company, I affirm to the best of my knowledge and belief, each vehicle to be tested in Nevada: 1) is safe to operate on the highways of this State; 2) if an operator is in the vehicle, has a system to safely alert the operator to take control of the autonomous vehicle if a technology failure is detected <u>or</u> if no operator is in the vehicle, the autonomous vehicle can achieve a minimal risk condition as required in NRS 482A; 3) is equipped with autonomous technology which does not adversely affect any other safety features of the vehicle which are subject to federal regulation. Additionally, I agree to operate my testing vehicle in accordance with the requirements set forth in Chapter 482A of the Nevada Revised Statutes and Nevada Administrative Codes.

I understand that providing of false information or the omission of the requested information in this application is grounds to deny, suspend, or revoke my testing permit and constitutes a gross misdemeanor under Chapter 482A of the Nevada Revised Statutes. I declare under penalty of perjury that the information contained in this application and any and all additional materials supplied to the Department are true and correct.

		8/2/2017
Applicant's Signature		Date
Applicant's Printed Name and Title		
State of, County of	of	
Subscribed and sworn before me this	, day of,,	
Notary Public or Authorized Nevada DM	V Representative Signature	(Notary seal)
	OFFICE USE ONLY BOX	
Approved Geographic Types	Testing License Plates	Approved Denied
<ul><li>☐ Interstate Highways</li><li>☐ State Highways</li><li>☐ Urban Environments</li><li>☐ Unpaved/Unmarked Roads</li></ul>		Initials:
Approved Environmental Types		Date:
☐ Night Driving ☐ Rain ☐ Fog		
Snow/Ice Wind		

или подрагоская применения неадвигиль отниченда до усерусите две выдом на открыта изалей постоя починай из болейний	LETTER OF	AUTHORI	ZATION
Address: 6502 W/ C	pulma Rlyd	#940	License Number:
City State Zip Code: 103 Å	nuelle CA	90045	
Telephone Number			
Please check appropriate authori	zation boxes:		
	Up Licenses	Pick	k Up Plates/Decals
Francis Telegra			
Printed Name of Authorized Ager	nt	<del></del>	Signature
Printed Name of Authorized Age	nt	_	Signature
Printed Name of Authorized Age	nt		Signature
Printed Name of Authorized Age	nt		Signature
The listed Agent(s) is no longe	r authorized to repre	esent my busines	s:
Printed Name of Agent	Printed Name	e of Agent	Printed Name of Agent
Printed Name of Agent	Printed Name	e of Agent	Printed Name of Agent
I hereby authorize the changes a	as indicated above for	my business with	the Nevada Department of Motor Vehicles.
Francis Julien			
Printed Name of Principal	-	****	7/31/2017
Signature of Principal			Date

To protect your business, notify the Department immediately of any changes to the above information.

#### CHILD SUPPORT INFORMATION

Nevada Administrative Code 482A requires the Department to request statements regarding child support from applicants for new and renewal of Autonomous Vehicle licenses.

Each license applicant applying for a new or renewal of his or her license must complete and sign the Child Support Information below.

Regulation prohibits the Department from processing your application without submission of the information below. Please mark the appropriate response and complete the remainder of the form. Failure to mark one of the three and completion of the form will result in denial of the application.

Q	I am not subject to a court order for the support of a child.	
	I am subject to a court order for the support of one or more children an plan approved by the district attorney or other public agency enforcing the of the amount owed pursuant to the order; or	d am in compliance with a ne order for the repayment
	I am subject to a court order for the support of one or more children and the order or plan approved by the district attorney or other public agency repayment of the amount owed pursuant to the order.	am not in compliance with enforcing the order for the
	Applicant's Social Security No.	
	Francis Julien	
	Applicant's Name (please print)	
	3	
		7/31/2017
	Signature of Applican	Date

#### **AUTONOMOUS TECHNOLOGY CAPABILITIES CERTIFICATION**

This checklist is to identify the geographic types, environmental types and specific capabilities that the autonomous vehicle can perform.

Please check the box that indicates the geographic and/or environmental types that you intend to test your autonomous vehicle technology in.

Geographic Types:	Environmental Types:
☐ Interstate Highways ☐ State Highways ☐ Urban Environments ☐ Unpaved/Unmarked Roads	<ul> <li>☒ Night Driving</li> <li>☒ Rain</li> <li>☐ Snow/Ice</li> <li>☒ Fog</li> <li>☒ High Crosswinds (gusts above 30 mph)</li> </ul>

Please note that if you plan on testing the autonomous technology be sure to check the box for the geographic/environmental types in which you wish to test. The selections on this page will be displayed on the testing permit. If testing outside of the permitted regions is detected, the Department may revoke the testing permit.

OBL-326 (7/2017) 12



#### **CERTIFICATE OF LIABILITY INSURANCE**

DATE (MM/DD/YYYY) 07/24/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not conform which to the certificate holder in line of such and conserve (a)

IT th	SUBROGATION IS WAIVED, subject is certificate does not confer rights to	to ti o the	ne tei cert	rms and conditions of th ificate holder in lieu of su	ie polic ich end	cy, certain priorsement(s)	olicies may	require an endorsemen	t. A st	atement on
PROD	DUCER			induce notice in sect of oc	CONTAC NAME:		•			
McG 1800	riff, Seibels & Williams of Oregon SW First Avenue, Suite 400				PHONE (A/C, No	Evel.		FAX (A/C, No):	503-943	-6622
	and, OR 97201				E-MAIL ADDRES			, (140,110)		
							URER(S) AFFOR	RDING COVERAGE		NAIC#
					INSURE	R A :ACE Amer	ican Insurance	Company		22667
INSU Keol	RED is Transit America Inc				INSURE	<b>R В</b> :ACE Prope	erty and Casua	Ity Insurance Company		20699
6053	W. Century Blvd				INSURE	RC:				
9th F	Angeles, CA 90045				INSURE	RD;				
					INSURE	RE:				
					INSURE	RF:				
				NUMBER:BSSVK6PZ	/= 5==	11001155 50		REVISION NUMBER:	IE DOI	IOV DEDICE
IN CE EX	IIS IS TO CERTIFY THAT THE POLICIES DICATED. NOTWITHSTANDING ANY RE ERTIFICATE MAY BE ISSUED OR MAY F (CLUSIONS AND CONDITIONS OF SUCH	QUIF PERT POLI	REME AIN, T CIES.	NT, TERM OR CONDITION THE INSURANCE AFFORD LIMITS SHOWN MAY HAVE	OF ANY	CONTRACT	OR OTHER I	DOCUMENT WITH RESPE	CT TO	WHICH THIS
INSR LTR	TYPE OF INSURANCE	ADDL	SUBR	POLICY NUMBER		POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMIT	s	
Α	X COMMERCIAL GENERAL LIABILITY			HDO G2786756A		06/01/2017	06/01/2018	EACH OCCURRENCE	\$	2,000,000
	CLAIMS-MADE X OCCUR							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$	4,000,000
								MED EXP (Any one person)	\$	0
								PERSONAL & ADV INJURY	\$	4,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:							GENERAL AGGREGATE	\$	4,000,000
	POLICY PRO- X LOC							PRODUCTS - COMP/OP AGG	\$	4,000,000
	OTHER:								\$	
Α	AUTOMOBILE LIABILITY			ISA H09059763		06/01/2017	06/01/2018	COMBINED SINGLE LIMIT (Ea accident)	\$	5,000,000
	X ANY AUTO							BODILY INJURY (Per person)	\$	
	OWNED SCHEDULED AUTOS HIRED NON-OWNED							BODILY INJURY (Per accident)	\$	
	AUTOS ONLY AUTOS ONLY							PROPERTY DAMAGE (Per accident)	\$	
В				VOO 000101101 000					\$	
В	UMBRELLA LIAB X OCCUR			XOO G2812448A 002		06/01/2017	06/01/2018	EACH OCCURRENCE	\$	10,000,000
	X EXCESS LIAB CLAIMS-MADE							AGGREGATE	\$	10,000,000
Α	DED RETENTION \$ WORKERS COMPENSATION			WLR C64410362		06/04/2047	06/01/2019	Y PER OTH-	\$	
	AND EMPLOYERS' LIABILITY Y / N			WEN 6044 10302		06/01/2017	06/01/2018	^   STATUTE   ER		1 000 000
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?	N/A						E.L. EACH ACCIDENT	\$	1,000,000
	(Mandatory in NH)  If yes, describe under DESCRIPTION OF OPERATIONS below							E.L. DISEASE - EA EMPLOYEE		1,000,000
	DESCRIPTION OF OPERATIONS below							E.L. DISEASE - POLICY LIMIT	\$	1,000,000
								,	\$ \$	
									\$	
DESC	RIPTION OF OPERATIONS / LOCATIONS / VEHICL	ES (A	CORD	101, Additional Remarks Schedul	e, may be	attached if more	space is require	( ed)	-D	
	ence of Coverage	1		,	,		,voquii.	•		
CEF	RTIFICATE HOLDER				CANC	ELLATION				
Ne	vada Department of mo upational and Business 5 Wright Way uson City, NV 89711	tor	Vo	hicles						
$o_{cc}$	upational and Residers	Lie	ens	ina				ESCRIBED POLICIES BE C		
55	5 Wright Way			0				EREOF, NOTICE WILL E Y PROVISIONS.	יב טבו	TITLINED IN
Ca	SON City, NV 89711									
Evid	ence of coverage				AUTHOR	RIZED REPRESE	NTATIVE	0.10.	<del>_</del>	)
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#### **AUTONOMOUS VEHICLE TESTING PERMIT APPLICATION REQUIREMENTS**

- Application for Autonomous Vehicle Testing Permit (OBL326).
- A nonrefundable licensing fee of \$101.00, plus \$21 for each set of Testing Permit Plates required for each vehicle.
- ★ A Letter of Authorization (OBL276).
- ☐ A Surety Bond (OBL328), Cash Deposit, or proof of insurance or self-insurance in the amount of \$5,000,000.
- Proof of ownership for each autonomous vehicle listed on the application (i.e. Title, Manufacturer's Certificate of Origin, Security Agreement, Vehicle Registration or other proof sufficient to the Department).
- An Insurance Certificate that meets or exceeds Nevada's minimum liability requirements pursuant to NRS 485.185 for each autonomous testing vehicle listed on the application. May not be an Operator's Policy as described in NRS 485.186.
- Submit a description of your autonomous technology.
- Submit documentation detailing your safety plan for testing on public roadways.
- Submit your plan for hiring and training the test vehicle operators.

# \* \* \* Disclosure of Information \* \* \*

The Nevada Department of Motor Vehicles is a public agency. The Department is subject to "Freedom of Information Act" requests per Nevada Revised Statute 239.010. These requests can come from any person or organization and any books, communications and records are subject to inspection or review upon the request. By law, the Department cannot withhold any of the information that is requested. If you have any proprietary information that you do not want included as a part of these records requests, please be sure to omit that information from this application and any communications moving forward.

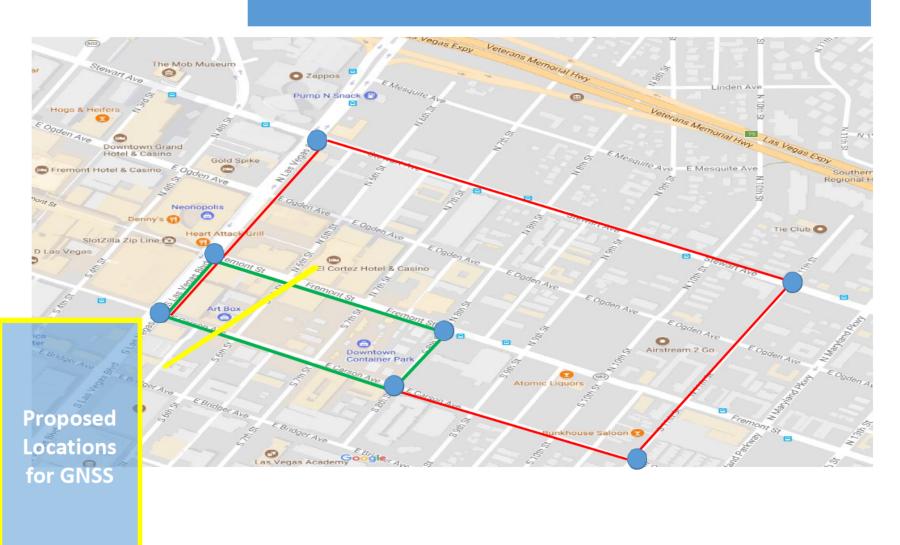
OBL-326 (7/2017)

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# Autonomous Shuttle project Las Vegas, Nevada

L.I.B. Street Closures:

AV shuttle route: Sept: 25<sup>th</sup> – Oct 20<sup>th</sup>





Location	City	Country	Nature of site	Type of site	Type of traffic	Date(s) of Operation
ITS Bordeaux	Bordeaux	France	Exhibition: Open road	Open	Pedestrians + Vehicles	from 5/10 to 10/10/2015
Smart Transport	Doha	Qatar	Demonstration	Open	Pedestrians + Vehicles	from 10/15 to today
Passenger Terminal Expo 2016	Cologne	Germany	Exhibition	Closed	Pedestrians	from 15/03 to 17/03/2016
EDF Nuclear Plant	Civaux	France	Nuclear Plant - Current Operation	Closed	Pedestrians + Vehicles	from 17/03 to today
URBACCESS	Paris	France	Exhibition	Closed	Pedestrians	from 22/02 to 23/03/2016
Klinikum Chemnitz	Dresden	Germany	Exhibition	Closed	Pedestrians	03/05/2016
CentrO	Dortmund	Germany	Exhibition	Closed	Pedestrians	06/05/2016
Park der Garten	Bremen	Germany	Exhibition	Closed	Pedestrians	10/05/2016
Kur Park	Dangast	Germany	Exhibition	Closed	Pedestrians	21/05/2016
Deutschen Transport Ministerium	Leipzig	Germany	Exhibition	Closed	Pedestrians	from 18/05 to 20/05/2016
Tunnel of Saint Gothard	?	Switzerland	Exhibition	Closed	Pedestrians	from 04/06 to 05/06/2016
Public Transport 2016 - European Mobility Exhibition	Paris	France	Exhibition	Closed	Pedestrians	from 14/06 to 16/06/2016
Sion - CarPostal	Sion	Switzerland	Current Operation	Open	Pedestrians + Vehicles	from 23/06/2016 to today
RAC Intellibus	Perth	Australia	Current Operation	Open	Pedestrians + Vehicles	from 08/16 to today
Lyon Confluence	Lyon	France	Current Operation	Open	Pedestrians + Vehicles	from 09/16 to today
WSN 2016	Paris	France	Demo	Closed	Pedestrians	from 02/09 to 05/09/2016
Salzburg Research	Salzburg	Austria	Demo	Open	Pedestrians	18/10/2016
Renault Trucks Plant	Lyon	France	Exhibition	Closed	Pedestrians + Vehicles	from 24/10 to 24/11/2016
University of Michigan	M-City	USA	Exhibition	Closed	Pedestrians	from 09/12/2016 to today
NTU University	Singapore	Singapore	Current Operation	Open	Pedestrians + Vehicles	from 19/12/2016 to today
Curtin University Inauguration	Perth	Australia	Current operation	Open	Pedestrians + Vehicles	01/01/2017
CES Las Vegas	Las Vegas	USA	Demo	Closed	Pedestrians	from 06/01 to 09/01/2017
Las Vegas	Las Vegas	USA	Exhibition at Fremont East District	Closed	Pedestrians	from 10/01 to 20/01/2017
HMI Inauguration	Auckland	New-Zealand	Demo	Closed	Pedestrians	from 07/01 to 18/01/2017
Tan Tock Seng Hospital	Singapore	Singapore	Demo	Closed	Pedestrians	20/01/2017
Heathrow Airport Showcase	London	UK	Demo	Closed	Pedestrians + Vehicles	25/01/2017
Christchurch Airport	Christchurch	New-Zealand	Current operation	Closed	Pedestrians	from 26/01/2017 to today



70th United Nations Economic Commission for Europe	Geneva	Switzerland	Demo	Closed	Pedestrians	from 20/02 to 22/02/2017
Inter Airport Singapore (NTU)	Singapore	Singapore	Demo	Closed	Pedestrians	from 15/02 to 17/02/2017
Passenger Terminal Expo 2017	Amsterdam	Netherlands	Demo	closed	Pedestrians	from 14/03 to 16/03/2017
CeBIT Hanover	Hanover	Germany	Demo	Closed	Pedestrians	from 19/03 to 24/03/2017
Salon de l'Association des Maires d'Île de Fra,ce	Paris	France	Demo	Closed	Pedestrians	from 28/03 to 30/03/2017
Ever Monaco	Monaco	Monte-Carlo	Exhibition	Open	Pedestrians + Vehicles	from 11/04 to 13/04/2017
Salzburg Research	Salzburg	Austria	Exhibition	Open	Pedestrians + Vehicles	from 24/04/2017 to today (not every day)
UITP Montreal	Montreal	Canada	Exhibition	Closed	Pedestrians	from 15/05 to 17/05/2017
SmartSuisse 2017	Basel	Switzerland	Demo	Closed	Pedestrians	27/04/2017
VivaTechnology 2017	Paris	France	Demo	closed	Pedestrians	from 15/06 to 17/06/2017
ITS Strasbourg	Strasbourg	France	Demo	Closed	Pedestrians	from 19/06 to 22/06/2017
City of Aalborg	Aalborg	Denmark	Demo	Closed	Pedestrians	from 29/06 to 02/07/2017
West Kowloon Cultural District	Hong-Kong	China	Demo	Closed	Pedestrians	from 01/07 to 31/07/2017
SB Drive	Tokyo	Japan	Exhibition in Shiba Park - current operation	Closed	Pedestrians	from 18/07 to today
Hong-Kong Nursery Park	Hong-Kong	China	Current Operation	Closed	Pedestrians	from 31/07 to today