

وصل Wasl

WASL Platform – Integration Guide for Tracking Service

Version 1.15

Last Update: 23/04/2019

Active Starting from 17/04/2019



1. TABLE OF CONTENTS

2.	Document History Log	3
3.	Document Purpose.....	4
4.	Support.....	4
5.	Definitions & Acronyms	4
6.	Intended Audience.....	5
7.	instructions for successful integration.....	5
8.	Prerequisites & activation Procedures	6
9.	Integration Services.....	8
9.1	Operating Company Registration Service	9
9.2	Vehicle Registration Service	12
9.3	Driver Registration Service	15
9.4	vehicle live Location Registration Service	17
9.5	Warehouse Registration Service	20
9.6	Warehouse Temperature and Humidity Service.....	22
9.7	Operating Company Inquiry Service	24
9.8	Vehicle Inquiry Service.....	25
9.9	Driver Inquiry Service	28
9.10	Operating Company Delete Service	29
9.11	Vehicle Delete Service.....	31
9.12	Driver Delete Service.....	33
9.13	Operating Company Update Contact Info Service.....	35
9.14	Vehicle IMEI Update Service.....	37
9.15	Driver Update Service	39
10.	Appendix	41

2. DOCUMENT HISTORY LOG

Version	Issue Date	What is new?
1.0	10/02/2017	First Version Published
1.1	10/23/2017	Update request/response and error codes
1.3	04/01/2018	Weight is now optional
1.4	06/03/2018	Weight is mandatory
1.5	27/05/2018	Update plate types table
1.6	09/07/2018	Update vehicle registration – location registration services
1.7	01/08/2018	Fix vehicle status code
1.8	01/08/2018	Delete vehicle ,driver, operating company
1.9	10/10/2018	Change vehicle status code , add address and role code
1.10	12/11/2018	Role Code must always be "T1"
1.11	27/01/2019	Add temperature and humidity to current location service
1.12	14/03/2019	Add warehouses registration service,
1.13	25/03/2019	Add changes to vehicle status, plate letters. Add more vehicle rejection reasons
1.14	10/04/2019	Added more Error codes Added Operating Company Update Contact Info Service General enhancements on guide format, definition, activation process and appendix Adding acceptance checklist
1.15	23/04/2019	Added vehicle IMEI and driver information update services.

3. DOCUMENT PURPOSE

The Purpose of this document is to define the integration requirements specifications between WASL platform and Tracking Service Providers' systems, this document intended to explain system functionality along with business requirements, from both overview and detailed perspective.

4. SUPPORT

- For Technical Support During integration phase, Contact waslsupport@elm.sa
- For Technical Support post the integration phase, Contact hd@elm.sa phone: 920000356
- For Business Support, refer to your account manager at Elm.
- For regulations, refer to PTA web site or visit PTA head office.

5. DEFINITIONS & ACRONYMS

Any terms or acronyms used within this document have to be defined in this section.

OnlyTerm\Acronym	Definition
WASL	Wasl is an electronic platform that aims to link the organizations working in the land transport field with the organizational entities. This enables the Public Transport Authority to monitor and control the land transport to raise their level of quality, safety, and security.
NAQL	NAQL is a portal for issuing and renewing transport licenses, vehicles operation cards and drivers cards.
PTA	Public Transport Authority. For information visit www.PTA.gov.sa
NIC	National Information Center.
Tracking Service Providers	The Tracking Service Providers that have a license from the PTA in providing the service for transport entities or under the process of getting the license.
Operating Company	A company or establishment that works in transport activity.
Vehicle Operation Card	A card issued electronically through Naql portal by the company, establishment or individual based on the activity type.
M	Mandatory field.
O	Optional field.
Co-owned	Lease ending with ownership

6. INTENDED AUDIENCE

Intended audiences for this document are:

- Technical/Business teams of Tracking Service Providers.
- Technical/Business teams of WASL.

7. INSTRUCTIONS FOR SUCCESSFUL INTEGRATION

1. A Tracking Service Provider must be registered first in Wasl platform per the procedures and get API key. API key is necessary for integration.

Example for API key: dkccfsertjasuq90354

2. All API key and credentials kept strictly confidential.
3. Tracking Service Provider is responsible for registering operating companies in Wasl platform.
4. Tracking Service Provider is responsible for sending the vehicles information to Wasl platform.
5. Tracking Service Provider is responsible for sending the driver information to Wasl platform.
6. Tracking Service Provider is responsible for sending the live locations of vehicles to Wasl platform.
7. Tracking Service Provider is responsible for utilizing all provided APIs by Wasl to support his clients in getting their business works smoothly.
8. Tracking Service Provider is responsible to handle the exception flow of failed cases and do the correction action to solve issues that impact sending the information per acceptance checklist.

8. PREREQUISITES & ACTIVATION PROCEDURES

The procedures below, show the steps that should be applied to get the integration completed:

#	Procedure الإجراء	Responsible Organization مسؤولية التنفيذ
1	Tracking Service Provider visits The Public Transport Authority to issue a registration request. يقوم مزود خدمة التتبع بزيارة هيئة النقل العام لطلب التسجيل في منصة وصل.	Tracking Service Provider مزود خدمة التتبع
2	Public Transport Authority will send the Tracking Service Provider information to Elm Company once the registration request is issued. يتم إرسال معلومات مزود خدمة التتبع إلى شركة علم فور الانتهاء من إصدار طلب التسجيل.	Public Transport Authority هيئة النقل العام
3	Elm's account manager will contact the Tracking Service Provider to support the registration process through completing the paper work and sign the registration form. يقوم مدير الحساب من شركة علم بالتواصل مع مزود خدمة التتبع لدعم عملية التسجيل لإكمال المتطلبات الإدارية للتسجيل وتوقيع نموذج التسجيل المعتمد.	Elm Team\Account Manager فريق علم/مدير الحساب
4	Create an API KEY for the tracking service provider and send it along with the integration guide to tracking service provider. إنشاء مفتاح ربط خاص بمزود خدمة التتبع وإرساله مع دليل الربط إلى مزود خدمة التتبع.	Elm\Support Team علم/فريق الدعم الفني
6	Notifying ELM when the integration is completed, and the required data is being sent to Wasl per the integration acceptance checklist in the appendix. إشعار علم بإكمال الربط وأن البيانات المطلوبة ترسل حاليا لمنصة وصل وفق قائمة معايير قبول الربط الموضحة في الملحقات في هذه الوثيقة.	Tracking Service Provider مزود خدمة التتبع
7	Verifying the completion and success of the integration process (Technically). التحقق من اكتمال ونجاح عملية الربط (فنيا).	Elm\Support Team علم/فريق الدعم الفني
8	Notify Public Transport Authority on the completion of the integration and the readiness for filed check process.	Elm\Account Manager علم/مدير الحساب

#	الإجراء Procedure	Responsible Organization مسؤولية التنفيذ
	إشعار هيئة النقل العام بانتهاء إجراءات الربط فنيا والجاهزية لمرحلة الفحص الميداني.	
9	The Public Transport Authority will set the time and place for the field testing, and Elm's account manager will inform the Tracking Service Provider. ستحدد هيئة النقل العام المكان والوقت للفحص الميداني، وسيقوم مدير الحساب من شركة علم بإبلاغ مزود خدمة التتبع.	Public Transport Authority هيئة النقل العام — Elm Team فريق علم
10	Inform Elm and the Tracking Service Provider with the result to complete any pending procedures. إشعار علم ومزود شركة التتبع بنتيجة الفحص الميداني لأجل إنهاء أي إجراءات إدارية معلقة.	Public Transport Authority هيئة النقل العام
11	Issue the official license for the tracking service provider. إصدار الترخيص اللازم لمزود خدمة التتبع.	Public Transport Authority هيئة النقل العام
12	Tracking Service Provider, starts sending his subscribers information who should integrate with Wasl per the regulations in this regard, and complies the acceptance criteria permanently. يبدأ مزود خدمة التتبع بإرسال بيانات الجهات المشتركة لديه والتي ينطبق عليهم الربط مع منصة وصل وفق اللوائح مع ضرورة الالتزام بتحقيق الاشتراطات بشكل دائم وذلك وفق قائمة الاشتراطات في الملحقات.	Tracking Service Provider مزود خدمة التتبع

9. INTEGRATION SERVICES

Service Catalog

The objective of this document is to provide the technical details of each field of input/output web services, data types and Mandatory or Optional data of field. Following are the services list that required to be utilized by tracking service provider to have successful integration:

WASL Service Catalog		
Ref#	Service Name	Description
9.1	Operating Company Registration Service	To register the operating company in WASL.
9.2	Vehicle Registration Service	To register the vehicles of operating company in WASL.
9.3	Driver Registration Service	To register the drivers of operating company in WASL.
9.4	Vehicle live Locations Registration Service	To send the latitude, longitude of the current location of the vehicles and other information to WASL for live tracking purpose.
9.5	Warehouse Registration Service	To register warehouses of operating company in Wasl, if the regulations require so.
9.6	Warehouse Temperature and Humidity Service	To send temperature and humidity reads of warehouses to Wasl
9.7	Operating Company Inquiry Service	To inquiry about the registration status of an operating company in WASL.
9.8	Vehicle Inquiry Service	To inquiry about the registration status of a vehicle of operating company in WASL. Note: It's a very important service that should be utilized by the tracking company to check the status of vehicle eligibility status in Wasl and solve any rejection reasons, if the vehicle is not eligible then the transport company will not be able to issue or renew the operation card of its vehicle through Naql portal.
9.9	Driver Inquiry Service	To inquiry about the registration status of a driver of operating company in WASL.
9.10	Operating Company Delete Service	To delete operating company from Wasl
9.11	Vehicle Delete Service	To delete vehicle from Wasl
9.12	Driver Delete Service	To delete driver from Wasl
9.13	Operating Company Update Contact Info Service	To update the contact information of operating company in Wasl
9.14	Vehicle IMEI Update Service	To update vehicle's IMEI number

9.15	Driver Update Service	To update driver's information
------	-----------------------	--------------------------------

9.1 OPERATING COMPANY REGISTRATION SERVICE

Description

This service is to be used by Tracking Service Providers to register the related operating company in WASL platform whenever a new company is added to their system.

Business rules

System should validate the following Business rules:

#	Related Business Rules
1	The operating company's commercial registration must be valid.
2	The operating company must have a valid transport license in Naql portal if applicable according to its activity type.
3	The operating company must not have inactive transport license in Naql portal

Service Details

Service name	Operating-companies
Description	Register an operating company in WASL platform
Sender	Tracking Service Provider
Source	Tracking Service Provider System
URL	https://wasl.elm.sa/api/tracking/v1/operating-companies
Method	POST

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY Elm FOR THE TRACKING SERVICE PROVIDER]

Body Fields			
Field Name	Data Type	M/O	Remarks
identityNumber	String (10)	Mandatory	Organization identity number. It's a unique number provided to the companies

Body Fields			
Field Name	Data Type	M/O	Remarks
			or individual establishments by the MOI. Usually start with 700 or 10.
commercialRecordNumber	String (10)	Mandatory	The number of commercial registration of the company. It's a unique number provided to the companies or individual establishments by the ministry of commerce. Can be found in the left top corner of the commercial certificate.
commercialRecordsIssueDateHijri	String	Mandatory	Issue date of the commercial registration of the company in Hijri
phoneNumber	String	Mandatory	Phone number of operating company. It must start with "+966"
extensionNumber	String	Optional	Extension number
emailAddress	String	Mandatory	Email address
managerName	String	Mandatory	Manager name
managerPhoneNumber	String	Mandatory	Manager's phone number
managerMobileNumber	String	Mandatory	Manager's mobile number

Service output

The following table shows all the messages codes, field codes and their descriptions

Output Fields			
Field Name		Data Type	Description
success		Boolean	'true' if received and validated successfully otherwise 'false'
resultCode		String	'success' if received and validated successfully. otherwise see Error Messages in appendix.
result	referenceKey	String	A unique reference id given by Wasl for each operating company after the registration, tracking service provider should store it in their record to be used in other Wasl web services.

Sample Request

```
{
  "identityNumber": "7001345730",
  "commercialRecordNumber": "10000000000",
  "commercialRecordIssueDateHijri": "1423-12-12",
  "phoneNumber": "+966555555555",
  "extensionNumber": "1234",
  "emailAddress": "feras@test.com",
  "managerName": "فراس غسان العويد",
  "managerPhoneNumber": "+966555555555",
  "managerMobileNumber": "+966555555555"
}
```

Sample Response

```
{
  "resultCode": "success",
  "result": {
    "referenceKey": "ed08d696-313a-481a-94c5-cccccc6de08c"
  },
  "success": true
}
```

9.2 VEHICLE REGISTRATION SERVICE

Description

This service is to be used by tracking service provider to register the vehicle in WASL platform whenever a new vehicle is required to be registered in Wasl per the regulations.

Business rules

System should validate the following Business rules:

#	Related Business Rules
1	The vehicle should have a valid license
2	The vehicle must be owned or co-owned by the operating company

Service Details

Service name	vehicles
Description	Register the vehicle of operating company in WASL platform
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/operating-companies/{OPERATING_COMPNAY_ID}/vehicles
Method	POST

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY Elm FOR THE TRACKING SERVICE PROVIDER]

Input Fields				
Field Name		Data Type	M/O	Remarks
sequenceNumber		String	Mandatory	The vehicle Sequence Number. It's serial number 8-9 digits can be found in right bottom of the physical vehicle license card.
vehiclePlate	number	String	Mandatory	
	rightLetter	String	Mandatory	

	middleLetter	String	Mandatory	
	leftLetter	String	Mandatory	
plateType		Integer	Mandatory	Refer to appendix for plate types
imeiNumber		String	Mandatory	IMEI number for the tracking device that installed on the vehicle

Service output

The following table shows all the messages codes, field codes and their descriptions

Output Fields			
Field Name		Data Type	Description
success		Boolean	'true' if received and validated successfully Otherwise 'false'
resultCode		String	'success' or 'duplicate'
result	referenceKey	String	A unique reference id given by Wasl for each vehicle after the registration, should be stored by tracking companies for later use.
	isValid	Boolean	Whether the vehicle is valid or not
	rejectionReason	String	The reason why the vehicle is not valid (refer to Appendix for more details)

Sample Input

```
{
  "vehiclePlate": {
    "number": "1111",
    "rightLetter": "ب",
    "middleLetter": "ب",
    "leftLetter": "ب"
  },
  "sequenceNumber": "1234567890",
  "plateType": 2,
  "imeiNumber": "D45444FF553872N"
}
```

Sample Output

```
{
  "resultCode": "success",
```

```
"result": {  
  "isValid": false,  
  "rejectionReason": "no_operation_card_found",  
  "referenceKey": "f08fd0c5-1ad7-44c7-94ad-52ee8fd0afd9"  
},  
"success": true  
}
```

9.3 DRIVER REGISTRATION SERVICE

Description

This service is to be used by tracking service provider to register a driver whenever a new driver is added to their fleet.

Business rules

System should validate the following Business rules:

#	Related Business Rules
1	The driver should have a valid identity
2	The driver must be sponsored by the operating company

Service Details

Service name	drivers
Description	Register the driver of operating company in WASL platform
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/operating-companies/{OPERATING_COMPANY_ID}/drivers
Method	POST

Headers	
Content type	X-API-Key
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Input Fields			
Field Name	Data Type	M/O	Remarks
identityNumber	String(10)	Mandatory	Driver Id
dateOfBirthHijri [OR] dateOfBirthGregorian	String	Mandatory	Either Hijri or Gregorian date is required
mobileNumber	String	Mandatory	Driver Mobile Number

Service output

The following table shows all the messages codes, field codes and their descriptions

Output Fields			
Field Name		Data Type	Description
success		Boolean	'true' if received and validated successfully otherwise 'false'
resultCode		String	'success' or 'duplicate'
result	referenceKey	String	A unique reference id given by Wasl for each driver after the registration.
	isValid	Boolean	Whether the driver is valid or not
	rejectionReason	String	The reason why the driver is not valid (refer to Appendix for more details).

Sample Input

```
{
  "identityNumber": "1000000000",
  "dateOfBirthHijri": "1350-07-20",
  "mobileNumber": "+966555555555"
}
```

Sample Output

```
{
  "resultCode": "duplicate",
  "result": {
    "isValid": true,
    "referenceKey": "20D0169F-6570-4423-BBB3-41CBF7BF2B50"
  },
  "success": false
}
```


9.4 VEHICLE LIVE LOCATION REGISTRATION SERVICE

Description

This is a bulk service used to send vehicles locations in batches of maximum 1000 locations for each request.

Service Details

Service name	Locations
Description	Send the current locations of vehicles in bulk
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/locations
Method	POST

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Input Fields				
Field Name		Data Type	M/O	Remarks
vehicleLocations[]		Array (max 1000)	Mandatory	
vehicleLocations[]	referenceKey	String	Mandatory	Vehicle reference key which given by Wasl after the registration
vehicleLocations[]	driverReferenceKey	String	Mandatory	Driver reference key which given by Wasl after the registration
vehicleLocations[]	latitude	Double	Mandatory	
vehicleLocations[]	longitude	Double	Mandatory	
vehicleLocations[]	velocity	Double	Mandatory	Velocity in km/h
vehicleLocations[]	weight	Double	Mandatory	Weight in kg. should represents the total weight of vehicle+load

Input Fields				
Field Name		Data Type	M/O	Remarks
vehicleLocations[]	locationTime	String	Mandatory	ISO 8601 Format, should be in KSA Time Zone
vehicleLocations[]	vehicleStatus	String	Mandatory	Refer to appendix for Vehicle Status
vehicleLocations[]	address	String	Mandatory	Detailed address as shown on the map e.g. "طريق الملك فهد، العليا، الرياض 15685، السعودية"
vehicleLocations[]	roleCode	String	Mandatory	Currently use "T1" as default value
vehicleLocations[]	temperature	Double	Optional	Its mandatory if temperature sensor is required by the regulator.
vehicleLocations[]	humidity	Double	Optional	Its mandatory if humidity sensor is required by the regulator.

Service Output

Output Fields			
Field Name		Data Type	Description
success		Boolean	A true value indicates that Wasl successfully received the request. A false value indicates that all vehicles failed to update
resultCode		String	'success' means all vehicles were updated. 'partial-success' means some vehicles were updated. 'fail' means no vehicle were updated
result	failedVehicles	Array	The reference IDs of failed vehicles

Sample Input

```
{
  "vehicleLocations": [
    {
      "referenceKey": "f08fd0c5-1ad7-44c7-94ad-52ee8fd0afd9",
      "driverReferenceKey": "BA55EA77-AC34-46F8-AD9A-
3E85373A6BB4",
      "latitude": 24.7136299,
      "longitude": 46.6718319,
      "velocity": 42.5,
      "weight": 3242.2,
      "locationTime": "2018-05-16T10:19:48.121Z",
      "vehicleStatus": "MOVING",
      "address": "الطريق الدائري الشمالي، الغدير، الرياض 12284، السعودية",
      "roleCode": "T1",
    },
    {
      "referenceKey": "8AA0730F-6379-47B8-B774-36E32A02DB3D",
      "driverReferenceKey": "310A7594-A9C8-4B75-AC47-
8CD0C0328EF8",
      "latitude": 24.7136299,
      "longitude": 46.6718319,
      "velocity": 55.5,
      "weight": 2942.7,
      "locationTime": "2018-05-15T10:19:48.121Z",
      "vehicleStatus": "PARKED_ENGINE_ON",
      "address": "طريق الملك فهد، العليا، الرياض 15685، السعودية",
      "roleCode": "T1",
    }
  ]
}
```

Sample Output

```
{
  "resultCode": "partial_success",
  "result": {
    "failedVehicles": [
      "8AA0730F-6379-47B8-B774-36E32A02DB3D"
    ]
  },
  "success": true
}
```

9.5 WAREHOUSE REGISTRATION SERVICE

Description

This is a service for registering warehouses of operating company if applicable according to the regulator business rules.

Service Details

Service name	warehouses
Description	Register a warehouse in Wasl
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/operating-companies/{operatingCompanyID}/warehouses
Method	POST

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Input Fields			
Field Name	Data Type	M/O	Remarks
name	String	Mandatory	Warehouse name
city	String	Mandatory	City of Warehouse
address	String	Mandatory	Detailed Address of Warehouse on the Map
latitude	Double	Mandatory	For the warehouse location on the map
longitude	Double	Mandatory	For the warehouse location on the map
landCoordinates	Array of points	Mandatory	[[x: 33.0, y:22.0], ...] x is latitude and y is longitude
category	Array of Integer	Mandatory	Refer to appendix for category types
operatingCompanyWarehouseId	String	Mandatory	Operating company's warehouse ID, should be unique
phone	String	Mandatory	Starts with +966
managerPhone	String	Optional	Starts with +966
email	String	Optional	Email for the contact person

Input Fields			
Field Name	Data Type	M/O	Remarks
landArea	String	Optional	Land area in square meter

Service Output

Output Fields			
Field Name	Data Type	Description	
success	Boolean	A true value indicates that the warehouse has been registered successfully. A false value indicates an error where the reason will be in the resultCode field.	
resultCode	String	'success' means the warehouse is successfully registered. Other values include 'warehouse_already_registered' which indicates a duplicate; or a value would indicate a missing field.	
result	isValid	Boolean	A true value means the warehouse is successfully registered.

Sample Input

```
{
  "name": "Warehouse Name",
  "city": "الرياض",
  "latitude": 24.7136299,
  "longitude": 46.6718319,
  "landCoordinates": [{"y": 0.0, "x": 0.0}, {"y": 10.0, "x": 0.0}, {"y": 10.0, "x": 10.0}, {"y": 0.0, "x": 10.0}],
  "category": [0, 1, 2, 3],
  "locationTime": "2018-05-16T10:19:48.121Z",
  "operatingCompanyWarehouseId": "13",
  "phone": "+966512345678",
  "managerPhone": "+966587654321",
  "email": "example@email.com",
  "landArea": "100.00"
}
```

Sample Output

```
{
  "resultCode": "success",
  "result": {
    "isValid": true
  },
  "success": true
}
```

9.6 WAREHOUSE TEMPERATURE AND HUMIDITY SERVICE

Description

This is a service for sending and updating warehouses' temperature and humidity.

Service Details

Service name	Update Warehouse temperature and humidity service
Description	Register/update a warehouse temperature and humidity.
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/operating-companies/{operatingCompanyID}/warehouses/stats
Method	POST

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Input Fields			
Field Name	Data Type	M/O	Remarks
warehouseId	String	Mandatory	Operating company's warehouse ID
temperature	Double	Mandatory	Warehouse temperature
humidity	Double	Mandatory	Warehouse Humidity

Service Output

Output Fields			
Field Name		Data Type	Description
success		Boolean	A true value indicates that the warehouse temperature and humidity has been registered/updated successfully. A false value indicates an error where the reason will be in the resultCode field.
resultCode		String	'success' means the warehouse temperature and humidity is successfully registered/updated. Other values include 'warehouse_not_found' which indicates an invalid warehouseId; or a value would indicate a missing field.
result	isValid	Boolean	A true value means the warehouse temperature and humidity is successfully registered.

Sample Input

```
{  
  "warehouseId": "13",  
  "temperature": 24.0,  
  "humidity": 16.0,  
}
```

Sample Output

```
{  
  "resultCode": "success",  
  "result": {  
    "isValid": true  
  },  
  "success": true  
}
```

9.7 OPERATING COMPANY INQUIRY SERVICE

Description

This service is to be used by Tracking Service Providers to inquiry about Operating company registration in WASL.

Business rules

System should validate the following Business rules:

#	Related Business Rules
1	The Tracking Service Provider must have a valid API KEY in WASL.
2	The operating company must be registered in WASL before by the Tracking Service Provider.

Service Details

Service name	Operating company inquiry service
Description	Inquiry about the registration status of an operating company in WASL
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/operating-companies?identityNumber={IDENTITY_NUMBER}&commercialRecordNumber={COMMERCIAL_RECORD_NUMBER}
Method	GET

Headers	
Content type	application/json
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Service output

The following table shows all the messages codes, field codes and their descriptions

Output Fields		
Field Name	Data Type	Description
referenceNumber	String	The reference number that given by Wasl after the registration of the operating company
name	String	Operating company name
registrationDate	String	Registration date in Wasl

Sample URL

https://wasl.elm.sa/api/tracking/v1/operating-companies?identityNumber=7000000000&commercialRecordNumber=1000000000

Sample Output

```
{
  "referenceNumber": "ED08D696-313A-481A-94C5-CCCCC6DE08C",
  "name": "شركة محمد سعيد - فرع 1",
  "registrationDate": "2017-10-23T11:15:39.775"
}
```

9.8 VEHICLE INQUIRY SERVICE

Description

This service is to be used by Tracking Service Providers to inquiry about vehicle registration in WASL.

Business rules

System should validate the following Business rules:

#	Related Business Rules
1	The Tracking Service Provider must have a valid API KEY in Wasl
2	The Tracking Service Provider must already registered the vehicle in Wasl before.

Service Details

Service name	Vehicle inquiry service
Description	Inquiry about the registration status of a vehicle of operating company in WASL
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/vehicles?sequenceNumber={SEQUENCE_NUMBER}
Method	GET

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Service output

Output Fields			
Field Name		Data Type	Description
referenceKey		String	The reference number that given by Wasl after the registration of the vehicle
plate	number	String	The number part of the plate
plate	rightLetter	String	Right letter of plate
plate	middleLetter	String	Middle letter of plate
plate	leftLetter	String	Left letter of plate
registrationTime		String	Registration time in Wasl
operatingCompanies[]	referenceKey	String	Operating company reference number in Wasl
operatingCompanies[]	name	String	Operating company's name
operatingCompanies[]	isVehicleValid	Bool	Vehicle eligibility status
operatingCompanies[]	vehicleRejectionReason	String	The rejection reason if vehicle is eligible

Sample URL

https://wasl.elm.sa/api/tracking/v1/vehicles?sequenceNumber=1234567890

Sample Output

```
{
  "referenceKey": "F08FD0C5-1AD7-44C7-94AD-52EE8FD0AFD9",
  "plate": {
    "number": "154",
    "rightLetter": "ط",
    "middleLetter": "ط",
    "leftLetter": "ن"
  },
  "registrationTime": "2017-10-23T11:27:04.814",
  "operatingCompanies": [
    {
      "referenceKey": "ED08D696-313A-481A-94C5-CCCCC6DE08C",
      "name": "شركة محمد سعيد - فرع 1",
      "isVehicleValid": false,
      "vehicleRejectionReason": "no_operation_card_found"
    }
  ]
}
```

9.9 DRIVER INQUIRY SERVICE

Description

This service is to be used by Tracking Service Providers to inquiry about driver registration in WASL.

Business rules

System should validate the following Business rules:

#	Related Business Rules
1	The Tracking Service Provider must have a valid API KEY in WASL.
2	The driver must be already registered in WASL by the Tracking Service Provider.

Service Details

Service name	Drivers
Description	Inquiry about the registration status of a driver of operating company in WASL
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/drivers?identityNumber={IDENTITY_NUMBER}
Method	GET

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Service output

Output Fields		
Field Name	Data Type	Description
referenceKey	String	The reference number that given by Wasl after the registration of the vehicle
Name	String	Driver's name
registrationTime	String	Registration time in Wasl

operatingCompanies[]	referenceKey	String	Operating company reference number in Wasl
operatingCompanies[]	name	String	Operating company's name
operatingCompanies[]	isDriverValid	Bool	Vehicle eligibility status
operatingCompanies[]	driverRejectionReason	String	The rejection reason if vehicle is eligible

Sample URL

<https://wasl.elm.sa/api/tracking/v1/drivers?identityNumber=1000000057>

Sample Output

```
{
  "referenceKey": "20D0169F-6570-4423-BBB3-41CBF7BF2B50",
  "name": "أحمد محمد",
  "registrationTime": "2017-10-23T11:41:49.249",
  "operatingCompanies": [
    {
      "referenceKey": "ED08D696-313A-481A-94C5-CCCCC6DE08C",
      "name": "شركة محمد سعيد - فرع 1",
      "isDriverValid": false,
      "driverRejectionReason": "no_valid_driver_license_found"
    }
  ]
}
```

9.10 OPERATING COMPANY DELETE SERVICE

Description

This service is to be used by Tracking Service Providers to delete Operating Company in WASL.

Business rules

System should validate the following Business rules:

#	Related Business Rules
1	The Tracking Service Provider must have a valid API KEY in WASL
2	The operating company must be already registered in Wasl by the Tracking Service Provider.
3	The Tracking Service Provider must have the operating company reference id which is the unique id given by WASL after the registration for any operating company.

Service Details

Service name	Operating company deletion service
Description	Delete an operating company in WASL system
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/operating-companies/{OPERATING_COMPANY_REFERENCE_KEY}
Method	DELETE

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Service output

The following table shows all the messages codes, field codes and their descriptions

Output Fields			
Field Name		Data Type	Description
success		Boolean	True if deletion is successfull
resultCode		String	'success' if deletion is successfull
result	isValid	Boolean	True if deletion is successfull

Sample URL

https://wasl.elm.sa/api/tracking/v1/operating-companies/3F06A8FD-24B0-40E0-BD8F-A401C5DDE24C

Sample Output

```
{
  "resultCode": "success",
  "result": {
    "isValid": true
  },
  "success": true
}
```

9.11 VEHICLE DELETE SERVICE

Description

This service is to be used by Tracking Service Providers to delete a vehicle from an operating company in WASL.

Business rules

System should validate the following Business rules:

#	Related Business Rules
1	The Tracking Service Provider must have a valid API KEY in WASL
2	The Vehicle must be already registered before in WASL by the Tracking Service Provider.
3	The Tracking Service Provider must have the operating company and the vehicle reference ids, which are the unique ids given by WASL after the registration.

Service Details

Service name	Vehicle deletion service
Description	Delete a vehicle from operating company in WASL system. Tracking Service Provider will use reference keys for both operating company and vehicle provided for them during registration
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/operationCompany/{OPERATING_COMPANY_REFERENCE_KEY}/vehicle/{VEHICLE_REFERENCE_KEY}
Method	DELETE

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Service output

The following table shows all the messages codes, field codes and their descriptions

Output Fields			
Field Name		Data Type	Description
success		Boolean	True if deletion is successfull
resultCode		String	'success' if deletion is successfull
result	isValid	Boolean	True if deletion is successfull

Sample URL

<https://wasl.elm.sa/api/tracking/v1/operationCompany/ED08D696-313A-481A-94C5-CCCCC6DE08D/vehicle/32262D0B-15BD-45EC-BBD9-469DFDE180BA>

Sample Output

```
{
  "resultCode": "success",
  "result": {
    "isValid": true
  },
  "success": true
}
```


9.12 DRIVER DELETE SERVICE

Description

This service is to be used by Tracking Service Providers to delete Driver from an operating company in WASL.

Business rules

System should validate the following Business rules:

#	Related Business Rules
1	The Tracking Service Provider must have a valid API KEY in WASL.
2	The Driver must be already registered in WASL before by the Tracking Service Provider.
3	The Tracking Service Provider must have the operating company and the driver reference ids, which are the unique ids given by WASL after the registration

Service Details

Service name	vehicle
Description	Delete a driver from operating company in WASL system.
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/operationCompany/{OPERATING_COMPANY_REFERENCE_KEY}/driver/{DRIVER_REFERENCE_KEY}
Method	DELETE

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Service output

The following table shows all the messages codes, field codes and their descriptions

Output Fields		
Field Name	Data Type	Description
success	Boolean	True if deletion is successful
resultCode	String	'success' if deletion is successful otherwise refer to appendix

Sample URL

<https://wasl.elm.sa/api/tracking/v1/operationCompany/ED08D696-313A-481A-94C5-CCCCC6DE08D/driver/32262D0B-15BD-45EC-BBD9-469DFDE180BA>

Sample Output

```
{  
  "resultCode": "success",  
  "result": {  
    "isValid": true  
  },  
  "success": true  
}
```

9.13 OPERATING COMPANY UPDATE CONTACT INFO SERVICE

Description

This service is to be used by Tracking Service Providers to update contact Info of an Operating Company in WASL.

Business rules

System should validate the following Business rules:

#	Related Business Rules
1	The Tracking Service Provider must have a valid API KEY in WASL.
2	The operating company must be already registered in WASL before by the Tracking Service Provider.
3	The Tracking Service Provider must have the operating company MOI-number and commercial record number

Service Details

Service name	Operating company update contact info service
Description	Update an operating company contact info in WASL system.
Sender	Tracking Service Provider
Source	Tracking Service Provider system
URL	https://wasl.elm.sa/api/tracking/v1/operating-companies/contact-info
Method	PATCH

Headers	
Content type	x-api-key
application/json	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Service Input

The following table shows all the messages codes, field codes and their descriptions

Input Fields			
Field Name	Data Type	M/O	Remarks
identityNumber	String	Mandatory	Operating company's MOI-Number (10 digits maximum)
commercialRecordNumber	String	Mandatory	Operating company's commercial record number (10 digits max)
managerName	String	Mandatory	(100 characters max)
managerPhoneNumber	String	Mandatory	(+966XXXXXXXXX)
managerMobileNumber	String	Mandatory	(+966XXXXXXXXX)

Service output

The following table shows all the messages codes, field codes and their descriptions

Output Fields		
Field Name	Data Type	Description
success	Boolean	True if update is successful
resultCode	String	'success' if update is successful otherwise refer to appendix

Sample Input

```
{
  "identityNumber": "7001345730",
  "commercialRecordNumber": "1000000001",
  "managerName": "محمد خالد العنزي",
  "managerPhoneNumber": "+966500233915",
  "managerMobileNumber": "+966500233915"
}
```

Sample Output

```

{
  "resultCode": "Contact info updated successfully.",
  "success": true
}

```

9.14 VEHICLE IMEI UPDATE SERVICE

1.1.1.1 Description

This service is to be used by Tracking Service Providers to update vehicle's IMEI from an operating company in WASL.

1.1.1.2 Business rules

System should validate the following Business rules:

ID	Related Business Rules	Depended service
1.	The Tracking Service Provider must have a valid API KEY	WASL
2.	The Vehicle must be register by the Tracking Service Provider.	WASL
3.	The Tracking Service Provider must have the vehicle sequence number.	WASL

1.1.1.3 Service input

Service name	Vehicle IMEI Update	
Description	Update a vehicle's IMEI from operating company in WASL system.	
Provider	ELM	
Consumer	Tracking Service Provider	
Targets	Tracking Service Provider system	
URL	https://wasl.elm.sa/api/tracking/v1/vehicles/imei	
Method	PUT	
Headers	Content type	application/json
	x-api-key	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]

Input Fields			
Field Name	Data Type/size	Mandatory\Optional	Remarks
sequenceNumber	String	Mandatory	
imeiNumber	String	Mandatory	

1.1.1.4 Service output

The following table shows all the messages codes, field codes and their descriptions

Output Fields			
Field Name		Data Type	Description
success		Boolean	True if update is successful
resultCode		String	'success' if update is successful otherwise refer to appendix
result	isValid	Boolean	True if update is successful

1.1.1.5 Sample Input

```
{
  "sequenceNumber": "123456789",
  "imeiNumber": "102030456",
}
```

1.1.1.6 Sample Output

```
{
  "resultCode": "success",
  "result": {
    "isValid": true
  },
  "success": true
}
```

9.15 DRIVER UPDATE SERVICE

1.1.1.7 Description

This service is to be used by Tracking Service Providers to update a driver's information from an operating company in WASL.

1.1.1.8 Business rules

System should validate the following Business rules:

ID	Related Business Rules	Depended service
1.	The Tracking Service Provider must have a valid API KEY	WASL
2.	The driver must be register by the Tracking Service Provider.	WASL
3.	The Tracking Service Provider must have the driver identity number.	WASL

1.1.1.9 Service input

Service name		Driver Update	
Description	Update a driver's information from operating company in WASL system.		
Provider	ELM		
Consumer	Tracking Service Provider		
Targets	Tracking Service Provider system		
URL	https://wasl.elm.sa/api/tracking/v1/operating-companies/{OPERATING_COMPANY_REFERENCE_KEY}/drivers		
Method	PUT		
Headers	Content type	application/json	
	x-api-key	[API KEY GIVEN BY ELM FOR THE TRACKING COMPANY]	
Input Fields			
Field Name	Data Type/size	Mandatory\Optional	Remarks
identityNumber	String	Mandatory	
mobileNumber	String	Optional	Either mobileNumber or email must be filled.
email	String	Optional	Either mobileNumber or email must be filled.

1.1.1.10 Service output

The following table shows all the messages codes, field codes and their descriptions

Output Fields			
Field Name		Data Type	Description
success		Boolean	True if update is successful
resultCode		String	'success' if update is successful otherwise refer to appendix
result	isValid	Boolean	True if update is successful

1.1.1.11 Sample Input

```
{  
  "identityNumber": "1234567890",  
  "mobileNumber": "+96656321032",  
  "email": "example@email.com",  
}
```

1.1.1.12 Sample Output

```
{  
  "resultCode": "success",  
  "result": {  
    "isValid": true  
  },  
  "success": true  
}
```


10. APPENDIX

A.1 Result Codes or Rejection Reasons

The following table list the errors and information messages:

Error code	Arabic Error message	English
not_found	المصدر المطلوب غير متاح	Generic entity not found code
duplicate	الشركة/المركبة/السائق/جهاز- التتبع قد تم تسجيله مسبقا	Company, vehicle or driver has already been registered
no_organization_license_found	المنشأة ليس لديها رخصة في نشاط النقل. (في بوابة نقل)	The organization does not have a transportation activity license (in Naql Portal)
invalid_organization_license_found	المنشأة لديها رخصة غير صالحة	Organization has in-active or expired license
operating_company_not_found	لم يتم العثور على الشركة المشغلة	Operating company not found
vehicle_not_found	معلومات المركبة غير صحيحة	Vehicle information is not correct
vehicle_plate_type_not_allowed	نوع لوحة المركبة غير مسموح به	Vehicle plate type is not allowed
no_operation_card_found	المركبة ليس لديها بطاقة تشغيل أو بطاقة التشغيل معطلة	Vehicle has no operation card or operation has expired
operation_card_expired	بطاقة تشغيل المركبة منتهية الصلاحية	Operation card has expired
wrong_id_or_date_of_birth	معلومات السائق غير صحيحة	Driver information is not correct
no_valid_driver_license_found	السائق لا يملك رخصة قيادة صالحة	Driver has no valid driving license
speed_not_send	جهاز التتبع لم يرسل قراءة سرعة، وفق قائمة الاشتراطات	Tracking company didn't send vehicle's speed, as per the criteria checklist
weight_not_send	جهاز التتبع لم يرسل قراءة وزن	Tracking company didn't send vehicle's weight
latitude_not_send	جهاز التتبع لم يرسل خط الطول	Tracking company didn't send latitude
longitude_not_send	جهاز التتبع لم يرسل خط العرض	Tracking company didn't send longitude
imei_number_not_send	جهاز التتبع لم يرسل رقم الجهاز IMEI	Tracking company didn't vehicles IMEI number

Error code	Arabic Error message	English
status_moving_not_send	جهاز التتبع لم يرسل حالة المركبة وهي متحركة وفق قائمة الاشتراطات	Tracking company didn't send moving status as per the acceptance criteria
status_stopped_not_send	جهاز التتبع لم يرسل حالة المركبة وهي متوقفة وفق قائمة الاشتراطات	Tracking company didn't send stopped status as per the acceptance criteria

A.2 HTTP Status Codes

Status Code	Description
200	Technical success. Check resultCode for any business exception
400	Bad request. Review your call statement
500	Internal server error. Contact support team

A.3 General Business Rules

ID	Rule description
BR1	The operating company's commercial registration must be valid
BR2	The operating company must have a valid transport license in Naql Portal
BR3	The vehicle shall have a valid license
BR4	The vehicle must be owned or co-owned by the operating company
BR5	The driver shall have a valid identity
BR6	The driver must be sponsored by the operating company
BR7	The Tracking Service Provider must have a valid API KEY in WASL
BR8	The operating company must be registered by the Tracking Service Provider.
BR9	The vehicle must be registered by the Tracking Service Provider.
BR10	The driver must be registered by the Tracking Service Provider.

A.4 Plate type

Codes	English Name	Arabic name
1	Private Car	خصوصي
2	Public Transport	نقل عام
3	Private Transport	نقل خاص
4	Public Bus	حافلة صغيرة عامة
5	Private Bus	حافلة صغيرة خاصة

Codes	English Name	Arabic name
6	Taxi	اجرة
7	Heavy Equipment	معدات ثقيلة
8	Export	تصدير
9	Diplomatic	دبلوماسي
10	Motorcycle	دراجة نارية
11	Temporary	مؤقت

A.5 vehicle Plate Letters

Arabic Letter
ا
ب
ج
د
ر
س
ص
ط
ع
ق
ك
ل
م
ن
هـ
و
ى

A.6 Vehicle Status

Codes	English Name	Arabic name	Description
PARKED_ENGINE_ON	Parked and Engine on	متوقفة والمحرك في وضع التشغيل	Applied while the vehicle is stationary (no movement) and the engine is in switch on mode
PARKED_ENGINE_OFF	Parked and Engine off	متوقفة والمحرك في وضع الإطفاء	Applied while the vehicle is stationary (no movement)

Codes	English Name	Arabic name	Description
			and the engine is in switch off mode
MOVING	Moving	المركبة تتحرك	Applied while the vehicle is in movement mode
MOVING_DEVICE_DISCONNECTED	Was Moving before the device disconnected	المركبة كانت تتحرك قبل انقطاع الإرسال	Applied once there is no signal while the vehicle was in movement mode before the event happened.
PARKED_DEVICE_DISCONNECTED	Was Parked before the device disconnected	المركبة كانت متوقفة قبل انقطاع الإرسال	Applied once there is no signal while the vehicle was in parking mode before the event happened
DEVICE_NOT_WORKING	The device is disconnected or damaged	جهاز التتبع مفصول أو معطل	Applied once the vehicle is not sending any signal for a consecutive 30 minutes period or once the device is actually disconnected from the vehicle.
TAMPER_WEIGHT	Tamper with weight sensors	تلاعب بأجهزة حساسات الوزن	Applied once there is no signal sent by the weight sensors or the once the sensor disconnected from the vehicle.
ACCIDENT	Accident	تعرضت لحادث	Applied once the AVL device experiences a shock that indicated as an accident as per the device manufacturer settings.

A.7 Warehouse Categories

Codes	English Name	Arabic name
0	Medical Equipment	أجهزة طبية
1	Drug	أدوية
2	Food	أغذية
3	Cosmetic	تجميل

A.8 Integration acceptance checklist

Please comply to the Integration acceptance checklist below, its subject to change as per the regulator request, any change will be announced immediately.

#	Acceptance Criteria معيار القبول	Constraints اشتراطات
1	Registered operating companies. تسجيل الشركات الناقلة.	Minimum: (1) operating companies الحد الأدنى: عدد (1) شركة ناقلة
2	Registered drivers for each operating company. تسجيل سائقين لكل شركة ناقلة.	Minimum: (1) drivers for each operating company الحد الأدنى: عدد (1) سائق لكل شركة ناقلة
3	Registered Trucks for each operating company. تسجيل الشاحنات لكل شركة ناقلة.	Minimum: (1) Trucks for each operating companies الحد الأدنى: عدد (1) مركبة لكل شركة ناقلة
4	Continues sending live location along with all required data per the integration guide instructions. الارسال الحي المستمر لجميع البيانات المطلوبة عن حسب تعليمات دليل الربط.	Regular data sending while the vehicle in Moving status: Every 2 minutes unless there is a new change in vehicle status such (switch on, switch off, accident, disconnection, tampering, etc.) the data should be sent immediately as occurs. Regular data sending while the vehicle in Parking status: Every 60 minutes unless there is a new change in vehicle status such (switch on, switch off, accident, disconnection, tampering, etc.) the data should be sent immediately as occurs.

#	Acceptance Criteria معيار القبول	Constraints اشتراطات
		<p>During the 48 hours post to the completion of the integration should cover the following status:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Weight=0 <input type="checkbox"/> Weight>0 <input type="checkbox"/> Velocity=0 <input type="checkbox"/> Velocity>0 <input type="checkbox"/> Parked and Engine on <input type="checkbox"/> Parked and Engine off <input type="checkbox"/> Moving <input type="checkbox"/> Was Moving before the device disconnected <input type="checkbox"/> Was Parked before the device disconnected <input type="checkbox"/> The device is disconnected or damaged <input type="checkbox"/> Tamper with weight sensors <input type="checkbox"/> Accident (by enforcing the device) <input type="checkbox"/> No repeated records with identical date
5	<p>Keep sending the live location until due the field check by PTA</p> <p>الاستمرار في ارسال البيانات</p>	<p>The test should be on loaded Truck.</p> <p>Note: tank trucks are not accepted</p> <p>الفحص يكون على شاحنة نقل بضائع كبيرة وعليها حمولة</p> <p>ملاحظة: سطحات تحميل المركبات أو الصهاريج غير مقبولة لأغراض الفحص</p>
6	<p>Match the data on Service provider system with Wasl based on the shared report by the service provider</p> <p>يقدم مزود الخدمة تقرير بتفاصيل الرحلة يكون التقرير صادر من النظام الذي لديه لأغراض المطابقة مع البيانات المستلمة في وصل.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> The Report should cover all the above cases and constraints <input type="checkbox"/> The sent data should be identical with the received on Wasl

#	Acceptance Criteria معيار القبول	Constraints اشتراطات
7	Comparing the velocity accuracy between vehicle and vehicle's dashboard مقارنة دقة قراءة السرعة المرسله من جهاز التتبع الى وصل مع مؤشر السرعة للشاحنة	Accuracy of data shall not be less than 95% يجب ان لا تقل الدقة عن 95%
8	Comparing the Weight Sensor accuracy with weight station مقارنة قراءة الوزن الكلي المرسله الى منصة وصل مع قراءة محطة الوزن	<ul style="list-style-type: none"> Should be the total weight of vehicle + load Accuracy of data shall not be less than 90% Should be in KG يجب ان يكون للوزن الكلي للشاحنة + الحمولة يجب ان لا تقل الدقة عن 90% يجب أن يكون الوزن بالكيلوجرام
9	Time Zone المنطقة الزمنية	All sent Date & Time should be in KSA Time Zone يجب ان تكون التواريخ والأوقات المرسله للمنصة وفق المنطقة الزمنية للمملكة العربية السعودية

.....