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# List of Relevant Use Cases (to find our scope)

This section describes the major use cases to find our scope. To define the detailed technical description the use cases in chapter 2 have to be finished.

## Certification, Installation, Service

This chapter deals with the use cases that need to be performed before the network can be used by all parties. Please refer to COM2012-380 proposal, Article 11 and Annex V for background information for the use cases in this section.

###  (UC 1.1) Initial installation of the workshop network

Pre-Requirement: A working IP infrastructure in the workshop

A piece of software (let us call it EGEA Net Communicator ENC) must be installed on a PC. The installation must be that easy that every user can follow the installation instruction.

Setting up the network infrastructure and configuration (router, IP-settings…) is not scope of this use case. So the IT is already established.

After ENC is installed all EGEA Net capable clients can find it and establish a connection.

The ENC has to ensure that only one instance is available (at least it will look like it for the clients).

The ENC can be configured to accept automatically any ENC compliant client or not. If the automatically acceptance is disabled, manual configuration of ENC shall be possible.

###  (UC 1.2) Verify that a new client is ENC compliant

*When a company creates a new client (device or DMS) that is EGEA Net capable, the software (with the device) needs to be certified by an authorized EGEA Net certifier. The EGEA Net certifier has to provide a test suite that can be used by all companies to test the EGEA Net compliance in advance. The test suite has to be updated if new features are implemented or if in real scenarios problems occur.*

*Steps: 1. Register for certification (get the test suite and everything else needed (key…)*

 *2. Perform all tests local (test plan, test tools…)*

 *3. Perform the official certification procedure*

*EGEA board approval on the certification concept is needed*

###  (UC 1.3) Install a new ENC client at a customer

When a new ENC client is installed, it can detect that it is running in an EGEA Net environment. The user has to enter only the required configuration data if needed.

The user does not have to configure anything at the ENC if a new client is introduced, if at the ENC the automatically acceptance is activated.

The new client registers itself at the ENC automatically in both cases (automatically acceptance configured or not on the ENC).

### Report current status of connected clients / network

The user can trigger at the ENC a connection/communication test

Output: A list of all connected clients with their status information at the ENC. The status information include of course status of the communication between ENC and ENC clients, but also for example software version …

It must be possible to get the status even with a non-running or non-functioning ENC by usage of an external diagnostic tool

### Introducing new client types / services

Must be possible without effects to already existing solutions (ENC, devices, DMS)

### Adding new information in available services

This must be possible without effects to already existing solutions (ENC, devices, DMS).
Therefore services have to ignore unknown fields.

### Software Update

Each client can tell the ENC where to look for software updates. The ENC checks at a configured time (schedule) at these locations, downloads the software to a repository available to the clients and notifies the clients about the new software.

The following chapters describe the main use cases that use the EGEA network. So the following use cases should lead to the architecture and main data model of the network. The use cases in chapter 0 should only provide input to get details about the data model.

## Perform a PTI

This chapter groups the use cases that are needed to fulfil our most important use case PTI

### Creating an Order and tracking the Status

The ENC is queried for orders
Each client can register as listener to order/status changes
The ENC buffers the orders
ENC clients can inform about status and data changes

### Get ENC time

The ENC shall be able to provide a reference time so it can be used by all clients as time reference.

### (UC 2.1.1, 2.1.3.1/2) Request Vehicle Data (log of the data request (token handling…))

Please refer to COM2012-380 proposal, Preamble points (11) and (25), Article 4 point 3.

To perform a PTI the measurement device needs to know data about the car. In some countries the usage has to be authorized and for each vehicle data request a result has to be available. The ENC client can ask the ENC about vehicle data. The ENC asks the responsible client to fetch the data. The token handling (authorization handling) is done within this client. If a token is needed to be added at the result, the token has to be added to the vehicle information and must then be used with the result delivery (see 1.2.5).
The ENC is not involved in this feature.

###  (UC 2.1.2) Perform PTI

This use case is the simple performing of the measurement. It does the main job but there is no interaction with the EGEA Net. (Otherwise this interaction should be stated in a separate use case.) Refer COM 2012-380 proposal, Article 6 and Annex II, ISO 18541-1 UC 5.1.4

### Transfer PTI result (secured data, traceability…)

After the measurement device has finished the measurement, it sends the data (if needed encrypted) to the ENC. So the ENC needs to be able to handle encrypted data but must not encrypt the data itself. If a token must be added to the result, this has to be handled by the measurement device. The ENC does not have to interpret or complete the data.

The ENC has to buffer the results till it can send it to the consumer of test results, e.g. DMS or PTI application.

Data are understood as binary data, e.g. any kind of information or format can be exchanged.

### (UC 2.5) Road-Side inspection

For RSI the same environment has to be created as within a PTI centre. So an ENC is needed and all involved clients (measurement devices, PTI application) have to register at it. Then a “normal” PTI is performed.

###  Perform the PTI in an intermediate scenario

A test engineer can use his notebook and run an ENC to be able to perform a PTI in a different environment. If this notebook is connected again in the PTI centre, the local ENC does not disturb the PTI environment.

The local ENC transfers all result to the ENC in the network. This ENC treats the results in the same way as its own. The local ENC can delete all results after the results have been transferred to the ENC in the network.

## Interaction between clients

### Trigger action (e.g. camera)

A client asks the ENC that an action is performed on a special client type.
The ENC checks if such a client type is available. If so it sends the request to the client of this type in the same group of the requestor (if group information is available).
The client checks if the action can be performed (action is known, action is available…) and returns the status via the ENC to the requestor.
If the action cannot be performed the ENC does not select a different client!

### (UC 2.2) Exchange live data

The communication must be possible directly and via the ENC.
The client requests information at the ENC about the data provider, containing all required information (rate…).
The client sends the request to the ENC or directly to the data provider to start the sending of measurement data either. The client stops the transmission by sending a stop-request to the same party where it sent the start-request.

### Remote Control

Remote control allows a client to request another client to perform a command. The request contains information. The other client can either send only one answer or several answers as in “Exchange live data”.

## (UC 2.4) Vehicle Diagnosis and Repair

Test systems TS and DMS are registered at the ENC. DMS adds order into the EN. The TS can mark an order as started/commenced. The TS sends results to the ENC and the ENC forwards it to the DMS that stores it and performs the accounting and spare time ordering and all other relevant and needed actions.
Here we need to think if we can somehow specify a unique data format and if we see this in our scope (at least in the first time).

So currently this use case does not add additional requirements.

## (UC 2.1.3.8) Interchange communication between PTI test centre and the VIP

Refer COM 2012-380 proposal, Preamble points (22) and (24), Article 8 point 5 and Article 15
Precondition: At the ENC the access data to the Vehicle Information Platform VIP has to be configured

### Get Vehicle Information Data

Each client can ask for vehicle data

The ENC sends this request to the VIP to get the data

### Send PTI results

The PTI application can send via the ENC the combined result.
If no connection to the VIP is available, the ENC has to buffer the results and send them after a connection is available.

If the VIP needs the data in a special format, the client needs to provide the data in such a format.

Possible problems: encrypted/signed data

In some countries maybe the result has to be signed and encrypted additionally from the ENC

### Retrieve PTI results

The PTI application can request via the ENC former PTI results

**Open issues:**

**Journal of orders and results and all other messages (to be discussed with Georges and Ramon)**

##

# Use cases not in the overview but must be considered to have all needed information

## Certification, Installation, Service

Please refer to COM2012-380 proposal, Article 11 and Annex V for background information for the use cases in this section.

###  (UC 1.4) Permanent replacement of vehicle test equipment

New ENC clients have to fulfil all ENC requirements. Therefore for the ENC no special handling is needed to handle replacements of ENC clients.

###  (UC 1.5) Temporary replacement of vehicle test equipment in a PTI center

Temporary ENC clients have to fulfil all ENC requirements. So also if an ENC client does not have all required rights to be used in the country for an extended time, the ENC requirements shall be fully met. Therefore for the ENC no special handling is needed to handle temporary replacements of ENC clients.

### Using ENC as software update centre

Each ENC client can specify an ftp link to a directory where new software versions for this client can be found. The ENC can be configured to retrieve all files from this ftp directory. An ENC client can get a list of all available files and a path (network share) where the corresponding files are located. The software update has to be performed by the ENC client itself. This feature avoids the multiple software downloads and enables the network administrator to restrict the access to the Internet solely to the ENC for the update service purposes.

## Perform a PTI

###  (UC 2.1.3.4) Inspection related vehicle data (Part of 1.2.1)

The PTI application shall transmit the electronic report containing the visual inspection results and the related data collected by equipment after the vehicle inspection.

This use-case is not ENC relevant, and is then out of scope of the present document.

### (UC 2.1.3.5) PTI test center daily report / Data log about vehicle identification request (Part of 1.2.1)

The ENC can be configured to send a log of all requested vehicle data (retrieved in use case 1.2.3). This log contains for each licence plate also an identification of a result (retrieved in use case 1.2.5).

This use-case is not ENC relevant, and is then out of scope of the present document.

###  (UC 2.1.3.6) Data log about vehicle inspection report transmission (Part of 1.2.5)

The ENC can be configured to send a log of all retrieved test results (retrieved in use case 1.2.5).

The point and all impacts are not fully understood by the team:

* Number of requests: linked to the number of time the same test is done during PTI?
* Transmission

Requirements for the behaviour of ENC for transmission of information (number of attempts, timeout, what to do if unsuccessful transmission…

## Interaction between clients

### (UC 2.3) Power Testing combined with emission testing (Part of 1.3.2)

###  (UC 2.3.1) ASM (5015 and 2525) Test – Acceleration Simulation Mode (Part of 1.3.2)

This use case is completely covered in 1.3.2.

###  (UC 2.3.2) Smoke opacity Lug down Test (Part of 1.3.2)

This use case is completely covered in 1.3.2.

## PTI Application Use Cases

###  (UC 2.1.3.3) Transfer of vehicle identification data

A PTI application can send a list of modified fields to the ENC. If an ENC client is registered for this kind of data, the ENC will transfer this data to this client. If no client is registered, the information is lost.

This use-case is completely covered inside the PTI application, and the ENC is not involved.

### (UC 2.1.3.7) Data log about vehicle inspector manual data modification

A PTI application can send a complete log of a set of field modifications to the ENC. If an ENC client is registered for this kind of data (same kind as in 2.4.1), the ENC will forward this data to this client. Otherwise this information get lost. The syntax of the content is not part of this specification.

This use-case is completely covered inside the PTI application, and the ENC is not involved.

Off-line Scenario: No connection to the target database

If a transmission fails, the ENC shall inform the sender which shall take any disposition to handle it (it is the task of the PTI application to buffer the information for later retransmission).

# Not Covered Use Cases

## End of Life

###  (UC 2.6.1) End of life for AC and cooling systems

###  (UC 2.6.2) End of life of other fluids

###  (UC 2.6.3) End of life of batteries

###  (UC 2.6.4) End of life deployment of pyrotechnic devices

##  (UC 2.7) Audit trail of fluid refrigerants

# Terminology

Compliancy A specification exists including a set of requirements. A compliant client to this specification shall match all requirements.

ENC EGEA Network Communicator

ENC client Any device or software (e.g. measurement device or DMS) compliant to ENC specification. A client can belong to a group. Example: a group is constituted by several clients of a PTI
test lane

Order A request to perform a task. A status is associated to an order.

PTI Periodical Technical Inspection

RSI Road-Side Inspection

VIP Vehicle Information Platform – as result of the ongoing European Tender MOVE/C4/325-1-2012..