VOLVO
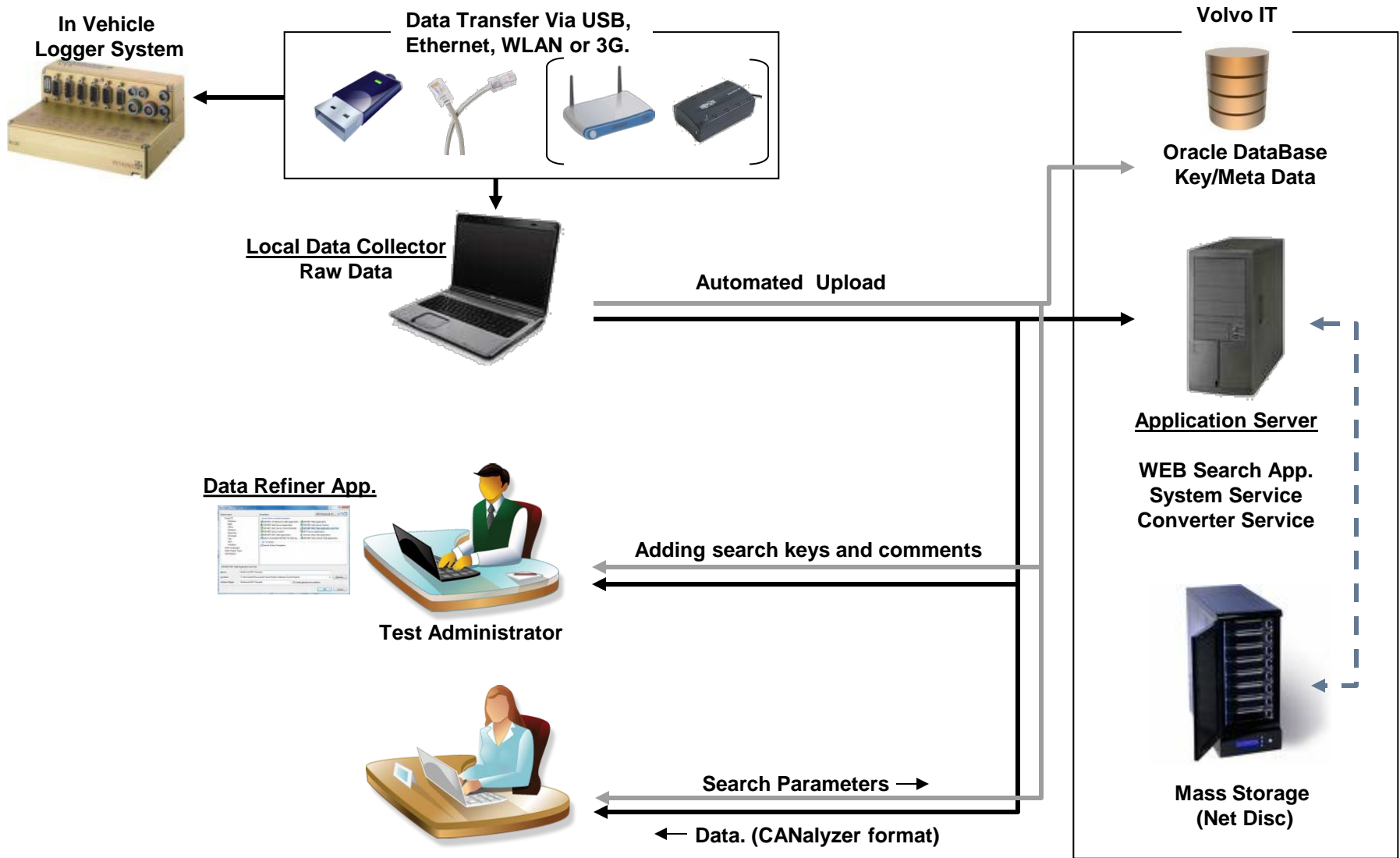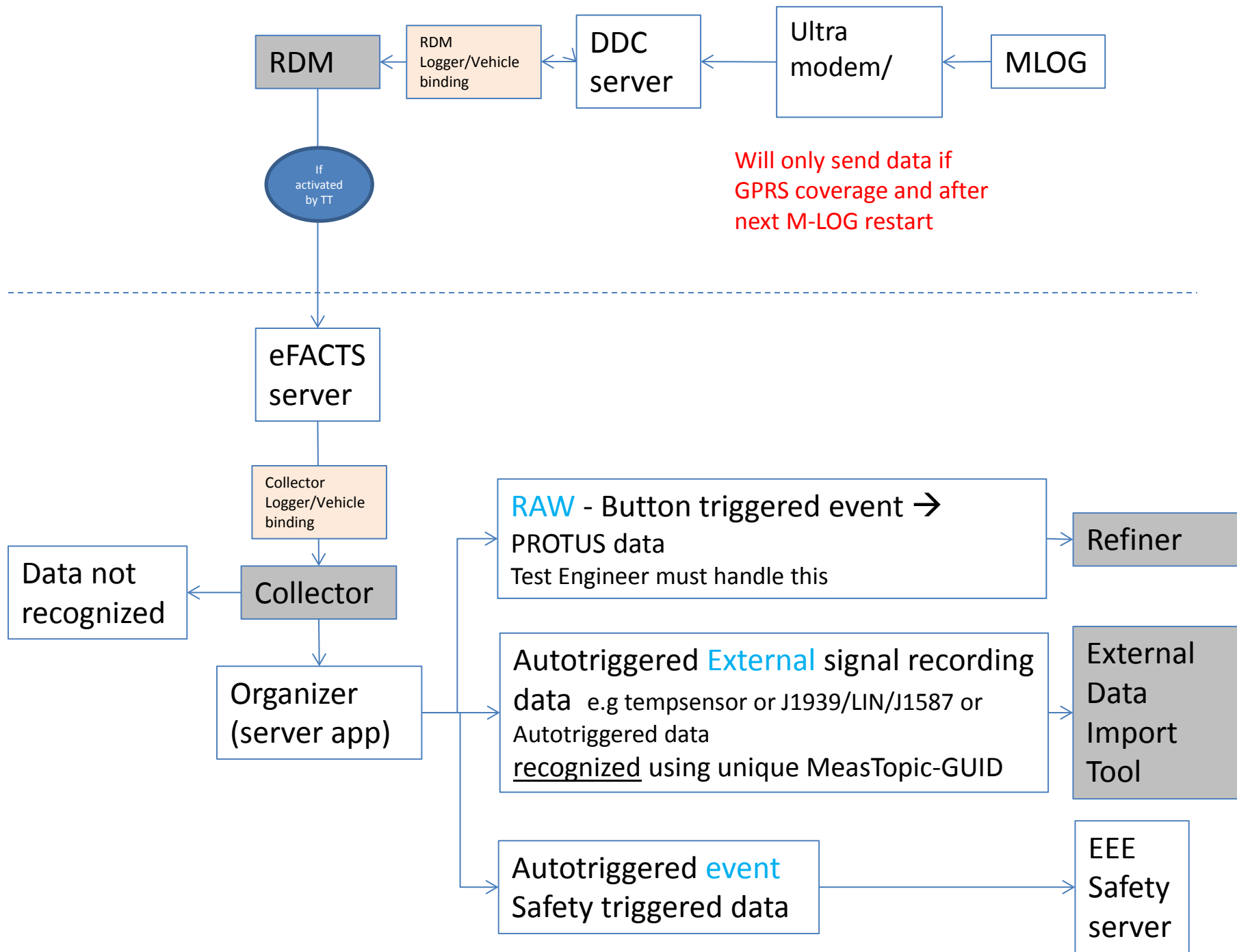
eFACTS Applications education
2016-01-15

Jean-Philippe Abeillon, Martin Svennungsson

Electronics FAults CapTuring System

In Vehicle Logger System

Data Transfer Via USB, Ethernet, WLAN or 3G.

Volvo IT

Oracle DataBase Key/Meta Data

Local Data Collector Raw Data

Automated Upload

Application Server

WEB Search App. System Service Converter Service

Data Refiner App.

Adding search keys and comments

Test Administrator

Search Parameters

Data. (CANalyzer format)

Mass Storage (Net Disc)

```
RDM ← [RDM Logger/Vehicle binding] ← DDC server ← Ultra modem/ ← MLOG
```

Will only send data if GPRS coverage and after next M-LOG restart

(If activated by TT)

eFACTS server

[Collector Logger/Vehicle binding]

Collector → Data not recognized

Organizer (server app)

RAW - Button triggered event →
PROTUS data
Test Engineer must handle this
→ Refiner

Autotriggered External signal recording data e.g tempsensor or J1939/LIN/J1587 or Autotriggered data
recognized using unique MeasTopic-GUID
→ External Data Import Tool

Autotriggered event
Safety triggered data
→ EEE Safety server

PC Prerequisites

- "Open Client" for MyPlace computers (FAROS)
  - GOT users
    - Send mail to Martin
    - When confirmed, use motivation sent by Martin

- Oracle SQLNet64 client (FAROS)

- Contact TFV team for installation and education => support.efacts@volvo.com

- USB stick for data retrieval

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eFACTS Collector – Upload of logger data

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eFACTS Collector

2 Main objectives

- Binding between the datalogger serial number and the truck it is in

- Upload Data to the Server

Oracle DataBase Key/Meta Data

Local Data Collector Raw Data

Automated Upload

Mass Storage (Net Disc)

VOLVO

eFACTS Collector

- When opened, a status window gives general information and a link to the application help:
  (this window can be deactivated if the checkbox is checked)
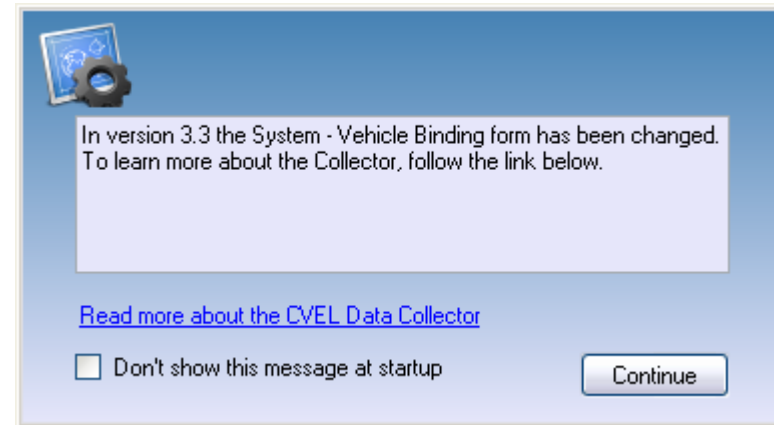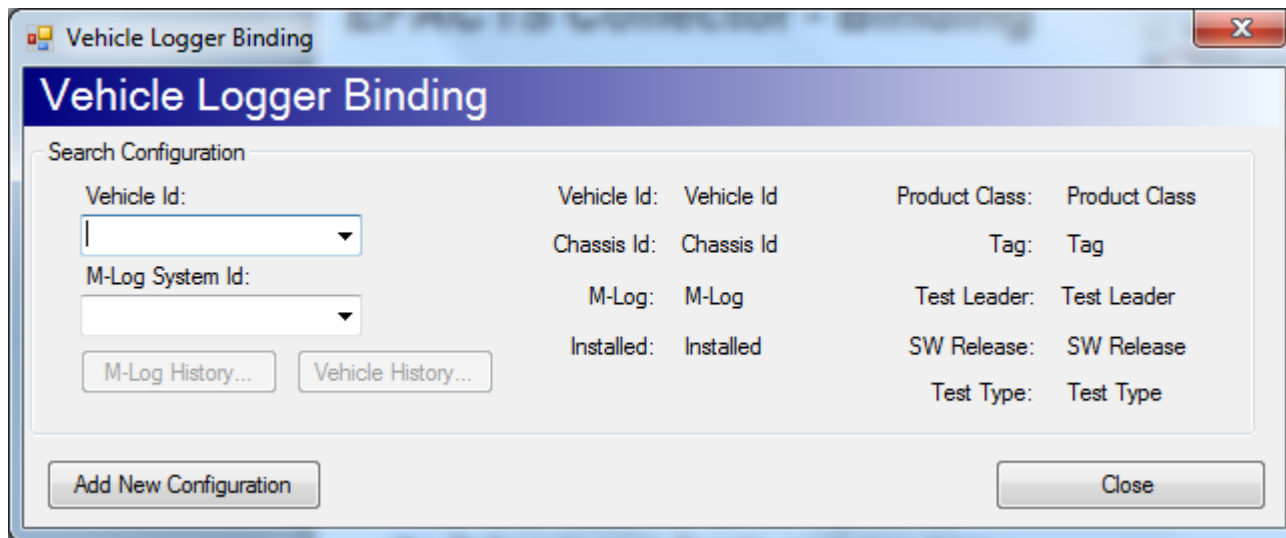
- Then, an icon appears in the Windows system tray next to the clock

- A right click in this icon opens a pop-up menu

VOLVO
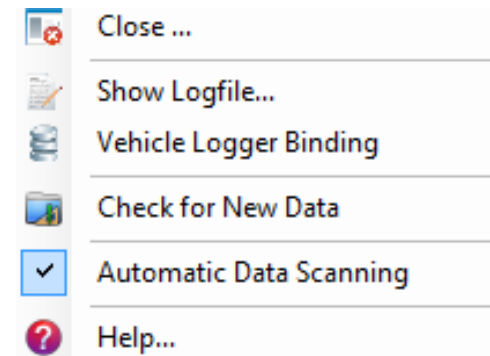
eFACTS Collector - Binding

- Click on the **Vehicle Logger Binding** option

- You can either select a Logger ID or a Truck ID

- The current binding parameters are displayed

- Then you can have a look of the binding history for the selected item

(Note! When adding a new Logger or Vehicle id, they will initially not be seen in the drop-down list, but you can enter the id manually to search for it).

eFACTS Collector - Binding

- What if the binding has to be changed?
  - e.g. moved logger to new vehicle, new test type, new SW in the vehicle, etc-

- => Click on Add New Configuration
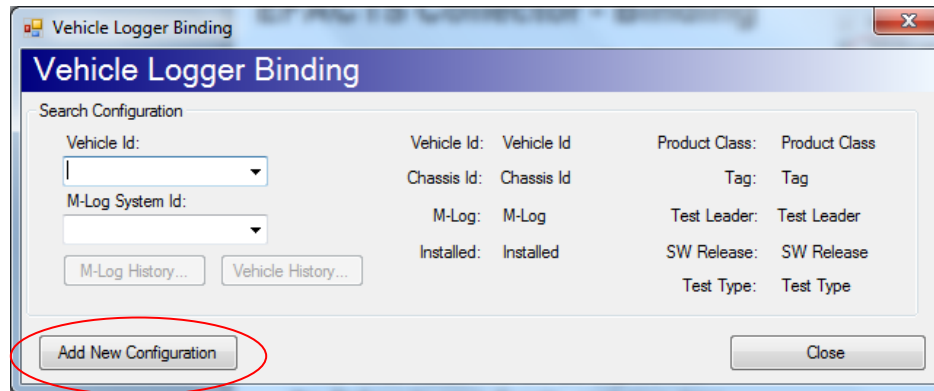
eFACTS Collector – Add New Binding

- Select a truck

- Current binding should be displayed

- Choose a SW, a Test Leader, a Site (Tag), a test type and an installation date

- Chassis ID and M-LOG ID names are controlled and must NOT be displayed in RED

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eFACTS Collector – Add New Binding

Fields <u>without</u> a grey back-ground can be entered by each user

(e.g. Vehicle id, Chassis id etc

Request New Items

Use if you can't find the correct values in the greyed drop down lists

Insert

When you entered all value, you have to press "Insert" to upload the new binding to the database

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Collector – Binding - Recommendations

- Product Class is a critical field. Please check with PROTUS which Product Class the Truck belongs to.

  - The PC filters the Truck Functions that will be seen in Refiner.

- Product Class, TAG, SW and Test type lists are locked. Please contact support for more items.

- /!\ DO NOT try to add a configuration with an old Starting date or between 2 existing configurations, it will mess the database up!!
  => Contact support.efacts@volvo.com if you did an incorrect binding.

- If you want to add or update (e.g. SW Package) for old vehicle binding configurations, ask support
  - (email or Click on the *Request for New Items* button in the Collector window)

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Collector DON'Ts

- Top part is for SEARCH →

- Buttom for *CHANGES*

- The keys in the Collector end up as keys in Refiner. (SW, TL)

- If you update, close and re-open windows, as you might change for another truck.

- Installation date is the date when the system was INSTALLED or when the SW (all keys) was changed (in the truck).

- Avoid to send same MEA-data again, ask Support E-FACTS if you can't find your data. (Copy detected will be shown).

- When problem, send "Show Log file..." to Support E-FACTS.

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eFACTS Collector – Upload Data

- You can get data from several loggers in the same way as one.

- The data structure on the USB-stick will be:

  - 8000xxxx

  - 8000yyyy

  - 8000zzzz
    (one folder per M-LOG datalogger serial number)

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eFACTS Collector – Upload Data

- Confirm that the binding in Collector is correct

- Copy all data from the logger (8000xxxx folder) to C:\MeasData

- This popup should appear

  New data has been detected

  eFACTS Collector
  New data has been detected.

  Start data transfer?

  Yes   No

  Snooze

- **/!\ WAIT FOR THE COMPLETED COPY
  BEFORE CLICKING YES (USB Stick LED not flashing)**

- Once Yes button is clicked, data will be transferred to the server when a VCN connection is present.

- The data transfer rate to the server is dependent from the quality of the connection **/!** In case of a MyAccess Connection **/!**

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eFACTS Collector – Upload Data

- If this window does not appear, you are in *Manual mode*

- Then Choose *Check for New Data* in the context menu of Collector icon (Notification area of the taskbar)

- You can check the **Automatic Data Scanning** option for next time if you want to
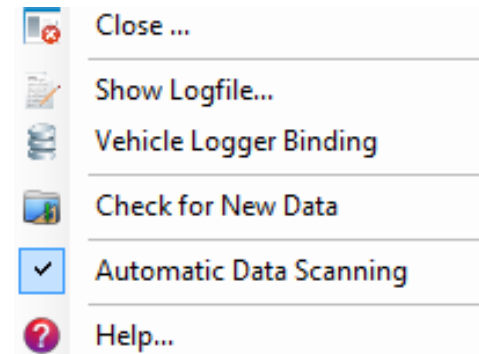
- Data that is not recognized by the server is rejected and will be moved to C:\eFACTS\Collector\Rejected and has to be handled manually by the user

- Upload and transfer procedure: see next slides

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eFACTS Collector – data upload
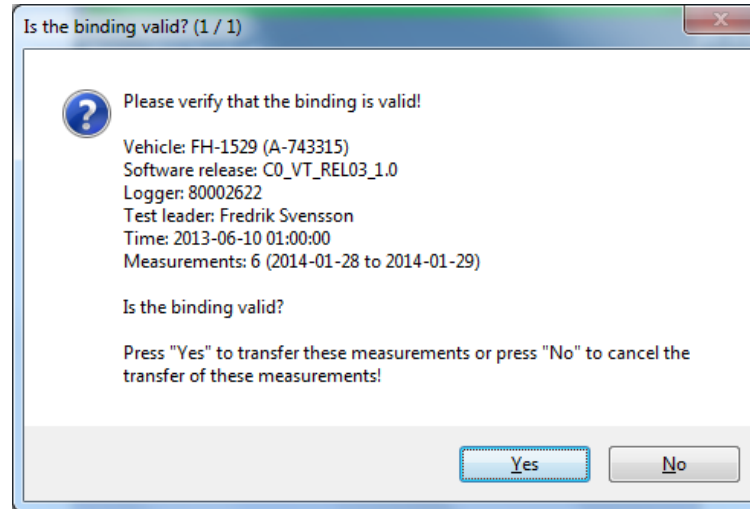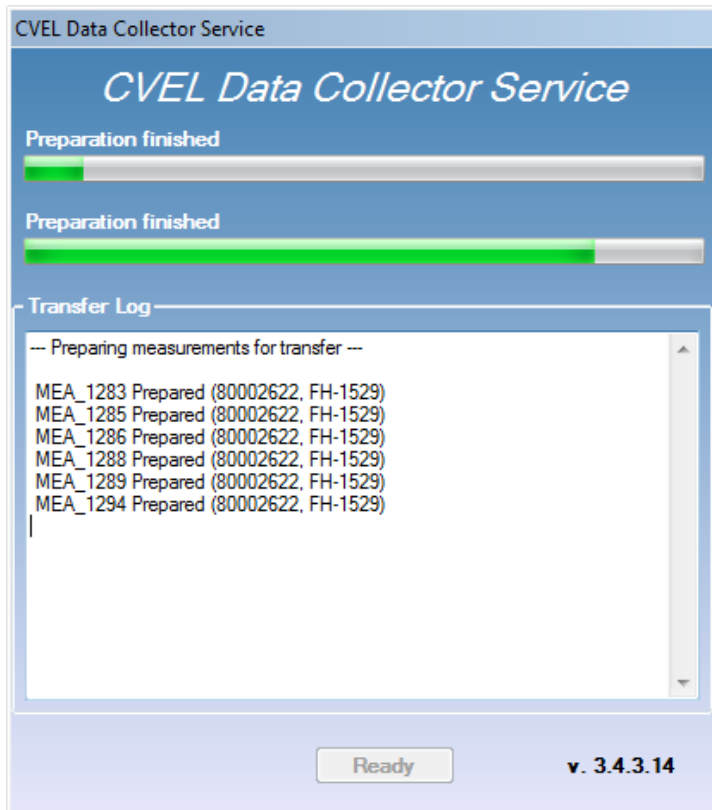
When the preparation of the MEA-packages is done, a pop-up window (like above) will show which truck the data will be sent to.

Make sure that all the information is correct, if not select "No" and change vehicle/logger bindings in Collector

# eFACTS Collector – data transfer
Check Vehicle Logger Binding

Is the binding valid? (1 / 1)

Is the binding valid? (1 / 1)

Please verify that the binding is valid!

Vehicle: FH-1529 (A-743315)
Software release: C0_VT_REL03_1.0
Logger: 80002622
Test leader: Fredrik Svensson
Time: 2013-06-10 01:00:00
Measurements: 6 (2014-01-28 to 2014-01-29)

Is the binding valid?

Press "Yes" to transfer these measurements or press "No" to cancel the transfer of these measurements!

Yes   No

1. Check Vehicle

2. Check Software Release

3. Check Test Leader

Info MEA-packages
- How many

- Start date and End date

Press **No** if incorrect binding info

Update the binding using Collector

If you have data from several loggers in C:\MeasData,
you will get one window for <u>each</u> truck binding

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eFACTS Collector – data upload

---
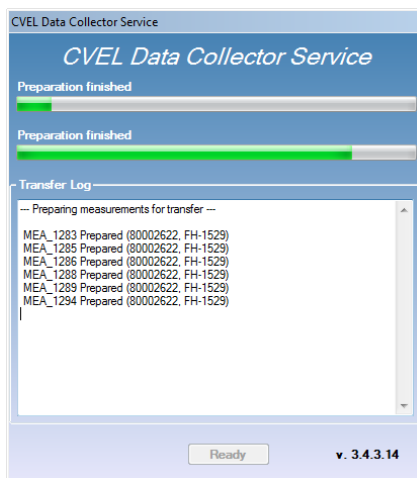
① --- **Preparing measurements for transfer** ---

MEA_1283 Prepared (80002622, FH-1529)

MEA_1285 Prepared (80002622, FH-1529)

MEA_1286 Prepared (80002622, FH-1529)

MEA_1288 Prepared (80002622, FH-1529)

MEA_1289 Prepared (80002622, FH-1529)

MEA_1294 Prepared (80002622, FH-1529)

---
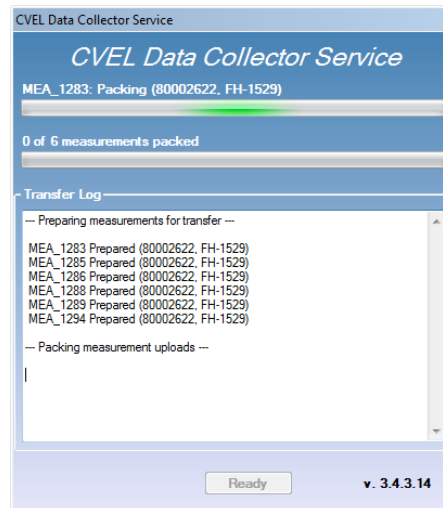
② --- **Packing measurement uploads** ---

MEA_1283 Packed (80002622, FH-1529, 10,04 MB)

MEA_1285 Packed (80002622, FH-1529, 29,00 kB)

MEA_1286 Packed (80002622, FH-1529, 148,76 kB)

MEA_1288 Packed (80002622, FH-1529, 41,36 kB)

MEA_1289 Packed (80002622, FH-1529, 6,46 MB)

MEA_1294 Packed (80002622, FH-1529, 427,06 kB)

---
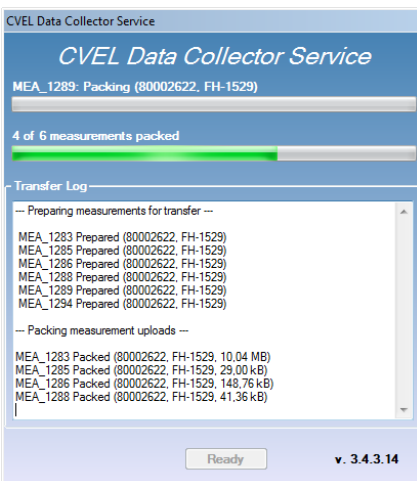
③ --- **Transferring measurement uploads** ---

MEA_1283 Transferred (80002622, FH-1529, 10,04 MB)

MEA_1285 Transferred (80002622, FH-1529, 29,00 kB)

MEA_1286 Transferred (80002622, FH-1529, 148,76 kB)

MEA_1288 Transferred (80002622, FH-1529, 41,36 kB)

MEA_1289 Transferred (80002622, FH-1529, 6,46 MB)

MEA_1294 Transferred (80002622, FH-1529, 427,06 kB)

 6 measurements transferred

0 measurements rejected

0 measurements deleted

0 measurements skipped

---
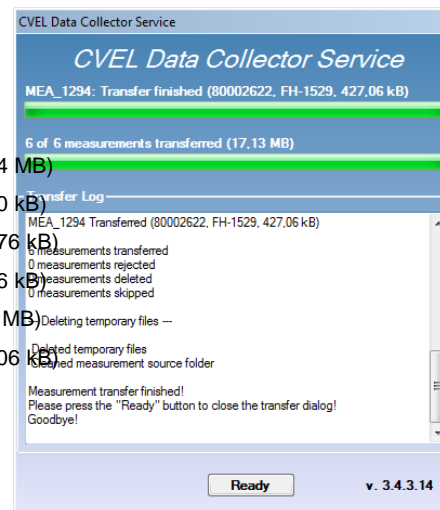
④ --- **Deleting temporary files** ---

Deleted temporary files

Cleaned measurement source folder

Measurement transfer finished!

Please press the "Ready" button
to close the transfer dialog!

Goodbye!

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eFACTS Collector - Transfer info
Where data could be found if error/warning

Rejected – C:\eFACTS\Collector\Rejected

- Unknown Traffic – The GUID of the CAN traffic recording is not in our list of known storage groups

- Unknown Storage Group– The GUID of the storage group is not in our list of known storage groups

- Event Files Mismatch – The number of different files does not match the number of events in the measurement

- Event file size error – The files size for the events are incorrect

- No Uploads – The measurement was not recognized

- Cannot extract split ZIP file – The MEA-package is split into several zip-files

Deleted – Can only be restored from USB stick

- Copy Detected – A copy of the CAN traffic already exists in the database

- SG Copy Detected – A copy of the signal recording already exists in the database

Skipped – C:\MeasData

- Ftp Upload Error– The FTP upload was unsuccessful

- Database Error – Data could not be written to database

- No Vehicle To Logger Binding – No binding could be found for the measurement

- Invalid Vehicle To Logger Binding – The transfer was aborted by user, due to incorrect binding

- Unknown Error – Unknown error during transfer (i.e. file read error or network error)

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eFACTS Refiner – Test Leader analysis

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eFACTS Data Refiner

CVEL_Data_Refiner

- Credentials needed:
  if no access, enter your ID and
  Outlook password then click on the
  request access link ([here)](#)

  /!\ Training required before access
  is granted /!\

- When access is granted, an
  information window appears that
  displays new functional features

  Click **Close** to continue

eFACTS Data Refiner – Definitions

Measurement

- A measurement starts automatically when the system starts.

- A measurement consists of one or several *"Events"*.

- A saved measurement is represented in the logger by 2 files,

  MEA_xxx.zip and LOG_xxx.zip. (xxx=sequential number)

Event

- An *Event* consists of <u>one</u> trigger start/stop activation.

- Every time the button is pressed an *Event* is started.

eFACTS Data Refiner – Definitions

- An event status can be :
  - New / Unfinished
  - Discarded
  - Check-in Pending
  - Checked-in
  - Loaded from database

- New / Unfinished: Needs to be handled by the TL/TE, will be deleted after 30 days, from when the event was logged in the vehicle.

- Discarded:
  - by the system in case of Autotraffic measurements (e.g. Safety)
  - by the TE/TL if the event is considered as not relevant

- Check-in Pending: Handled by TE/TL, ready to be checked-in

- Checked-in: event has already been completely handled and downloaded into the database

- Loaded from database: event uploaded from the database

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eFACTS Data Refiner – Icon Bar

- *Load MEAs*: Look for a measurement on the server, before they are checked-in or discarded

- *Load From DB*: Load some already "Checked In" events

- *Pending Check In*: To Check In all pending events

- *UDS Viewer*: Will be used to check SW/HW versions of the truck

- *Assist Me*: To get some help from troubleshooters, sends data without using PROTUS.

- *More Event Info*: Specific Info about an event, like GPS map

- *PROTUS Link*: Link generation to be put into PROTUS reports

- *Reports*: For PVT team, PVT reports generation. May be used to get an overview of a specific truck and SW package.

- *Statistics*: Global info about eFACTS

- *Help*: Complete documentation + mail to eFACTS support

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eFACTS Data Refiner – New Data

- Ths feature enable to see if any Remote or USB data has been uploaded

- If you can't find your data using the instruction below, contact "TT GOT"
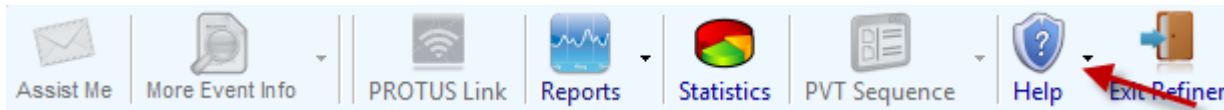
Select "Look for New Data"
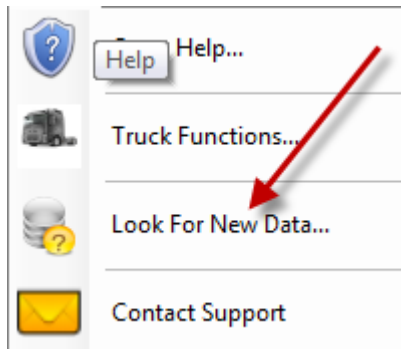
Select the number of "Days Ago" and press "Load"

VOLVO
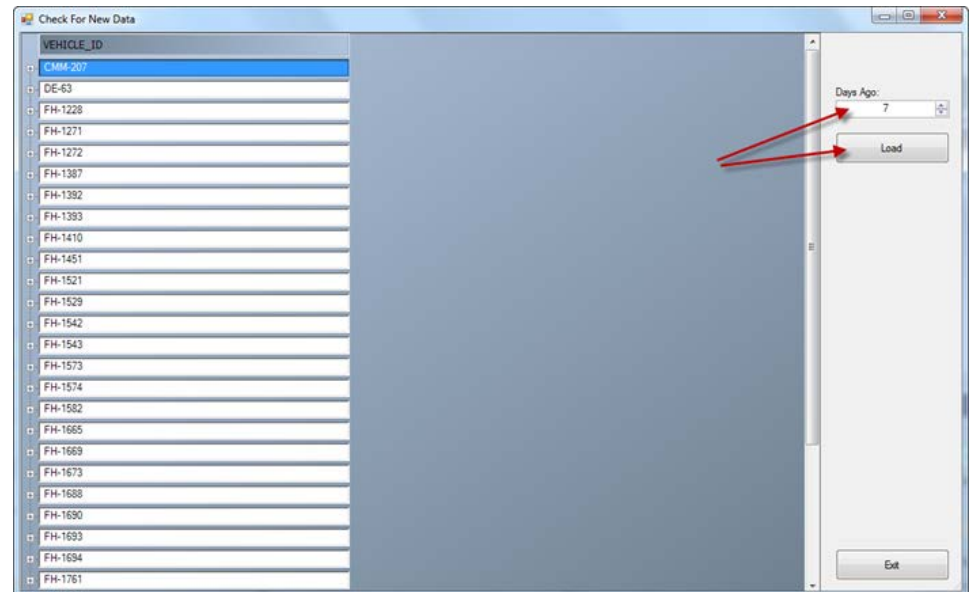
eFACTS Data Refiner – New Data

Example:

- Last data that was uploaded, was recorded 2014-11-27

- Button Trigger exists in MEA_0303 and 0305.

  - 0303 – contains 48 events(BT and auto), only event 4+7 are button triggered

  - 0305 – contains 39 events, no 12 is BT triggered

- External data has been uploaded

  - E.g. P2540safety triggered data and FuelEco data

eFACTS Data Refiner – Loading MEAs

- Click on Select Visible Group to get your vehicles (LYS, GOT etc).

- View Unfinished Events: Events which have not been handled yet, works when a MEA file is selected for a specific truck

- Unlock Measurements: Locked MEAs appear in red and can only be unlocked by their originator or the administrator.

- Select MEAs as told (rowselector) and Click **Load**
  NB: you can filter data by drag-and-dropping column headers.

- It can take time for your measurements to be available
  (up to 1h, depending on the system load). If longer, e-mail support.

eFACTS Data Refiner – Loading MEAs

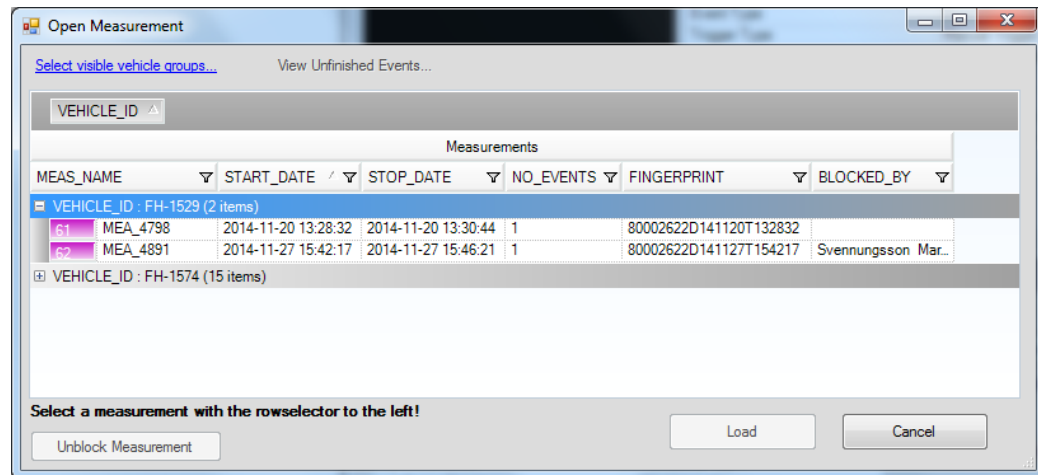- Every user can have their own filtering, for the vehicles you want to see. This filtering will be stored and re-used.

eFACTS Data Refiner – Loading MEAs

- Add condition: Any = OR, All = AND
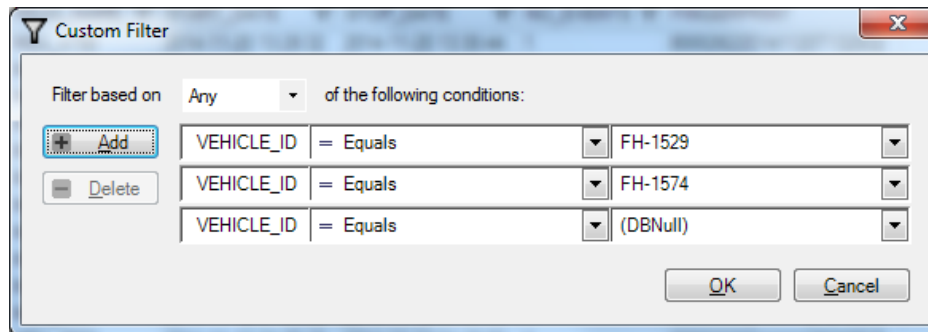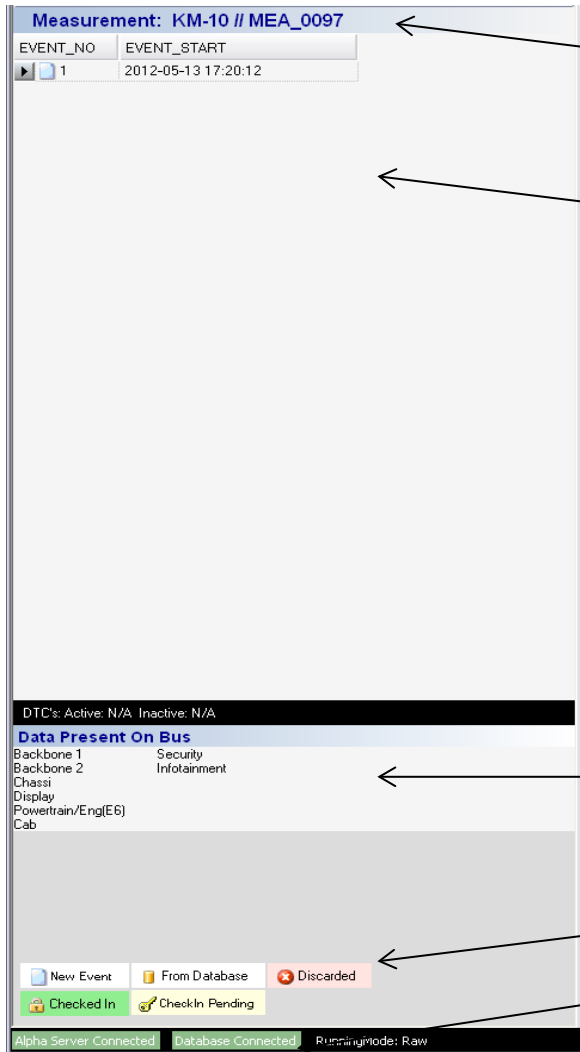

- To Delete filter, click on any field on that row and press Delete

Example after filtering and also by using "Vehicle_ID" Grouping

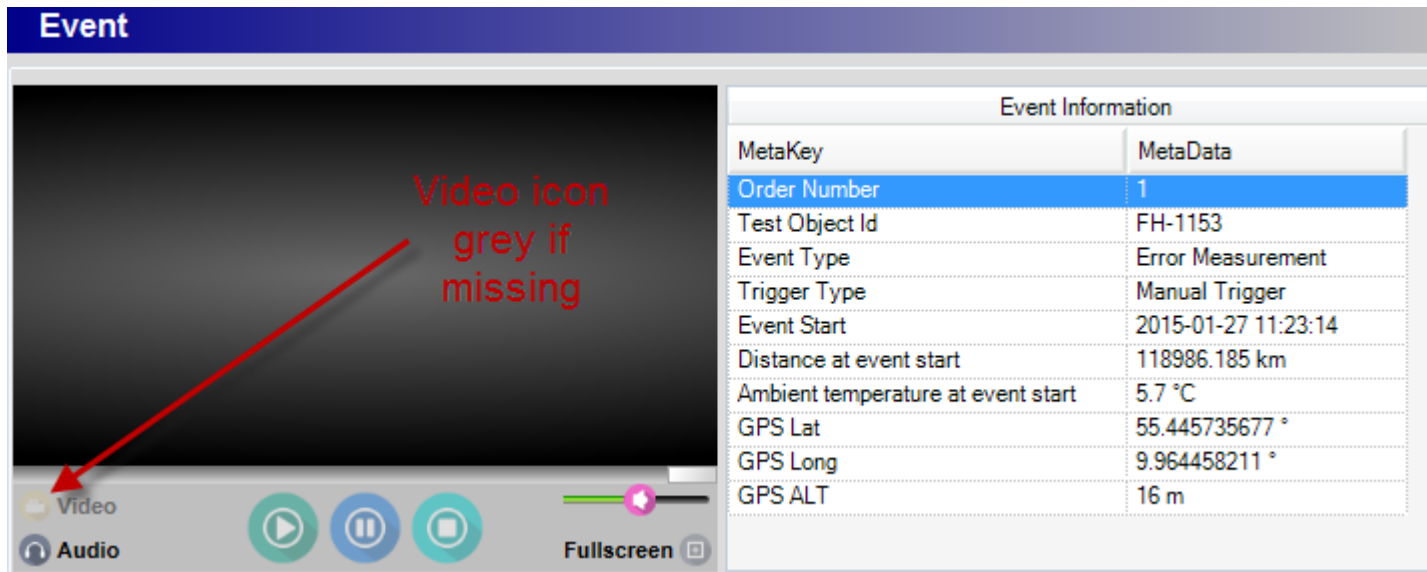# eFACTS Data Refiner – Events

Measurement: KM-10 // MEA_0097

EVENT_NO	EVENT_START
▶ 📄 1	2012-05-13 17:20:12

Measurement name

List of Events

DTC's: Active: N/A Inactive: N/A

Data Present On Bus

Backbone 1	Security
Backbone 2	Infotainment
Chassi	
Display	
Powertrain/Eng(E6)	
Cab	

Recorded CAN buses
(extracted <u>only</u> from the <u>first</u> event in the MEA-package)

📄 New Event	📁 From Database	❌ Discarded
🔒 Checked In	✒ CheckIn Pending	

Legend for events icons

Alpha Server Connected Database Connected RunningMode: Raw

Connection status to the server

eFACTS Data Refiner – Event Info

- Event metadata presentation for the selected event
- Video and audio will be played syncronized, if available
- Scrolling is possible, "Full screen" only if video available
- Manual Trigger = Button pressed

eFACTS Data Refiner
PVT Sequence (PVT Team)
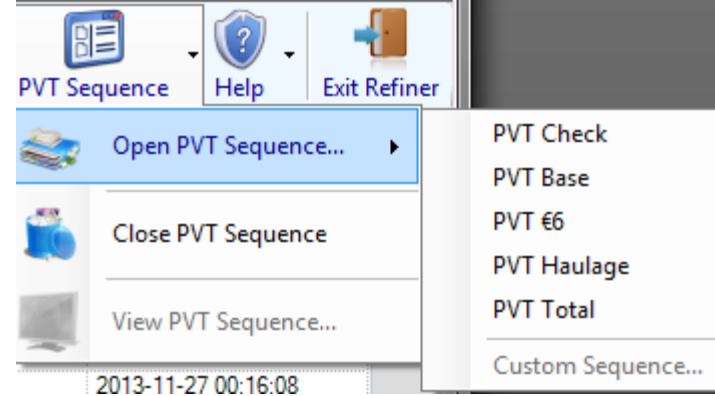
- By Loading a pre-defined sequence or a Custom sequence, it is possible to bind a Test Case to the event.

- If no Test Case, then "OFD" can be selected

- The Test Case list will follow the selected sequence

- For each test case, you can access a list of typical errors and dedicated comments you can directly paste into the Refiner main window:

eFACTS Data Refiner – Keys

- Several mandatory keys

- Crucial part of the system, to find events and create reports

- Pending = ready for being checked-in in the database

- Key Valid for ... Events : copy/paste keys for the events in the MEA
  /!\ Everything added is recorded! Don't mess with data
  Keys are lost when leaving

- Comments: Always stored.

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eFACTS Data Refiner – Keys
- Truck Function and Test Type

When creating Keys –
The "Truck Function" list will now be filtered based on Product Class

(Functions not avaliable in the vehicle, will not be seen.)

"Test Type", "Test Leader" and "SW_Release"data will come from the Collector Vehicle/Logger binding

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eFACTS Data Refiner – Keys

- PROTUS ID: report no where the link will be
  - name must be correct ! **L**XXX (not lxxx)
  - no spaces before or after the Lxxx number
  - no additional zeros...
  - several events can be linked to the same PROTUS

- You can Add and have several PROTUS to one Event.

- Test Type: Field Test, PVT, AET, RT...

- Ocurrence: Rarely/ Once / Often / Every Time

- SW release: BaselineBranch_PC_week_version
  (e.g. P0P1_24_w1623_2.1)

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eFACTS Data Refiner – Keys

- PROTUS Points:

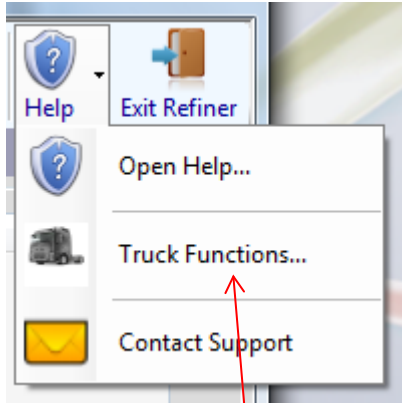| Points	Consequence for the customer
100	The fault is very severe and will cause: • unplanned stop/breakdown • mission abort • a safety risk • inability to start
25	The fault is severe and will demand actions before next planned service after mission.
5	All customers will notice the fault but accept that actions can wait until next planned service.
1	The fault is minor and only some customers will take notice.

- Follow PROTUS Guidelines + GDI 968-50:

http://violin.volvo.net/SiteCollectionDocuments/Powertrain/VPT%20G%C3%B6teborg/projects%20a̲ ̲ ̲ ̲ ̲ ̲DI968-50%5B1%5D.pdf

Microsoft
werPoint Presentati

VOLVO

eFACTS Data Refiner – Keys

- The complete TF list can be found under *Help -> Truck Function* menu of the Refiner

- The Truck Function list you get when working on a particular event, will depend from the Product Class your test truck belongs to.

  - Notify "Support E-FACTS" if a Truck Function is missing.

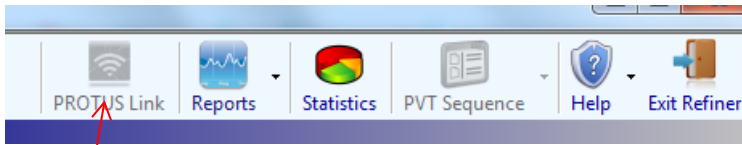**VOLVO**

eFACTS Data Refiner – Truck Function List

Drag header to organize

Possible to use filter by clicking on filtersymbol

All Truck Functions

eFACTS Data Refiner – PROTUS Key

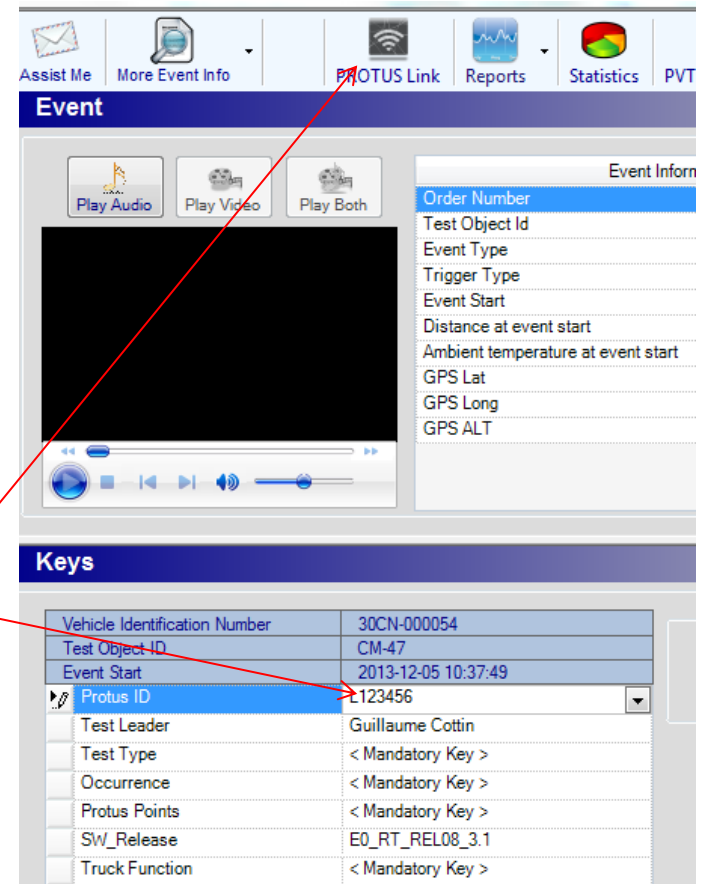PROTUS link not available at startup

Work flow:

Load Measurement

Listen to events

If PROTUS - create PROTUS first

Enter the PROTUS-id as key

Press "PROTUS Link" -->
 (Link will be created based on value entered in PROTUS-id key)

eFACTS Data Refiner – PROTUS Link

- The PROTUS link created will be based on the PROTUS ID that was entered as the PROTUS key value.

```
Protus_GUID_L123456.txt - Notepad
File  Edit  Format  View  Help
This is a link to the eFacts DATA search engine covering data for PROTUS ID: L123456

http://cvelprod.got.volvo.net/Default.aspx?ProtusGUID=a95fcc83-58d0-41b4-a583-fb0227de5f5e

[Link copied to clipboard!]
```
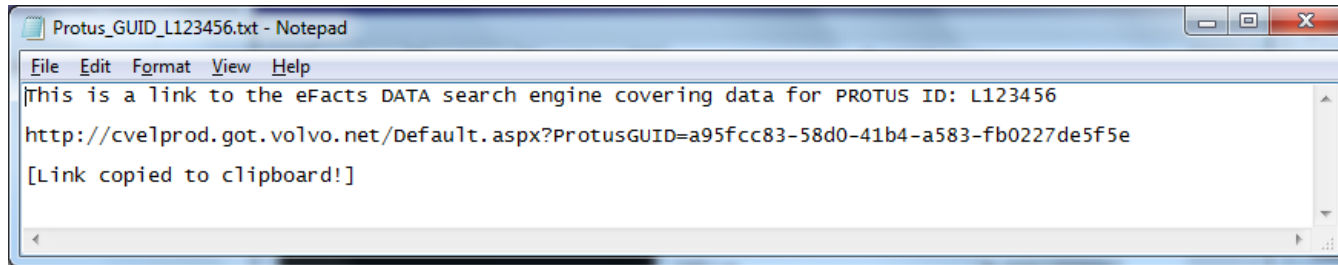
- The http link is already in the clipboard and can now be paste into the url-link (folder Documents) in PROTUS (see next slide).

- The link needs to be created only once for each PROTUS report. If the same issue has already been detected in the truck, just select the correct report number in the *PROTUS ID* Key.
  (When engineering later clicks on the link, all the different logged events for that PROTUS will appear.)

- The PROTUS link will not work until you have "Checked In" the pending events to the database and could take some minutes (try the link).

PROTUS link

Give same "Link name" as PROTUS no

Link name: [   ]   Link: [   ]   [Upload Link]

Uploaded By	Uploaded Date ↓	Link Name
Thommy Karlsson	2010-10-12	L112078

Result after "Upload Link"

Number of Links: 1

Paste http-link

http://cveldata.got.volvo.net/Default.aspx?PROTUSGUID=7d521104-a737-4e68-9f74-924d098b0a4b

Encrypted PROTUS Id

Example, if clicking on Link above

CVEL Data System
Volvo 3P

▪ About ▪ Help ▪ Close

Measurement data

	Path name	Comments	Audio	Video
☐	FH-318\FH-318D101012T085825		N	N
☑	FH-318\FH-318D101012T085925	Several functions runnig, ignition off key out	N	N

Files to download: Zip file structure
☑ CANalyzer: ⦿ With subfolder for each event   [Download]
☐ Audio: ○ All files in same folder   [Hide Details]
☐ Video:

Path name	Keys	
FH-318\FH-318D101012T085925	Vehicle Identification Number	A-699931
	Test Object ID	FH-318
	Event Start	2010-10-12 08:59:25
	Protus ID	L112078
	Test Leader	Thommy Karlsson
	Test Type	PVT
	E2E Function	Vehicle Modes Application
	Occurrence	Often

Vehicle Identification Number
Test Object ID
Event Start
Protus ID
Test Leader
Test Type
E2E Function
Occurrence

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My responsibilities as TE/TL

1. Check/update - logger/vehicle binding in Collector

2. Transfer the data from the logger to the server.

3. Check-in *Events* to the database with appropriate keys attached, **within 30 days <u>after the log event was taken</u>** in the vehicle.

4. Discard invalid events!

5. Link the data to a PROTUS report.

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eFACTS – Checklist - 1

1. Log the problems about the truck by pressing the button AND giving an audio feedback

2. Retrieve data from the M-LOG datalogger with the USB stick.

3. In the Collector service, check the correct binding between the M-LOG and the Truck no.

4. Copy data (8000xxxx folder) to the C:\MeasData folder .

5. Thanks to the eFACTS Collector service, upload data to the server.

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6. Open the eFACTS Data Refiner and:
   - Wait for the database to be updated with latest data
   (can take up to 1h).
   - <u>Check-in</u> or <u>Discard</u> each event
   - In the same time, create the PROTUS report for checked-in events.

7. Generate the PROTUS Link and put it into the *Documents* tab of the PROTUS report

8. Don't forget to Click [Pending Check In] to check-in your pending events (could take time)

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