Safe and Sober

Alcohol Interlocks in Europe

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European Standards

Cenelec Committee BTTF 116-2 “Alcohol Interlocks”

Started in 2003

Convenor: Johannes Lagois

Actually participating countries:

Belgium
Finland
France
Germany
Netherlands
Norway
Spain
Sweden
United Kingdom

Observers:

Canada (ACS)
South Africa (PFK)
USA (Smart Start)

Agenda

- Cenelec standards
- Data use
- Technical issues

CENELEC Standards

- EN 50436-1 : Instruments for drink-driving-offender programs
- EN 50436-2 : Instruments having a mouthpiece and measuring breath alcohol for general preventive use
- TR 50436-3 : Guidance for decision makers, purchasers and users
- EN 50436-4 : Connectors for the electrical connection between the alcohol interlock and the vehicle
- EN 50436-5 : Instruments not having a mouthpiece and measuring breath alcohol for general preventive use
- EN 50436-6 : Data security

EN 50436-1 : Instruments for drink-driving-offender programs

- Initial release in November 2005
- Technical standard focusing on performance requirements

  - Environmental conditions: Temperature: -40°C - +85°C
  - EMC (Electromagnetic Compatibility): ISO 7637
  - Electrical tests: ISO 16750
  - Vibration: ISO 16750
  - Drop Test
  - IP (Ingress protection): IEC 60529
  - Accuracy: ± 0,02 mg/l or ± 15% (whichever is greater)
  - Analytical specificity
  - Breath Volume: 1,0 l nominal (0,7 l – 1,2 l)
  - Manipulation and Circumvention
  - Data memory
  - Long term behavior

EN 50436-1 : Instruments for drink-driving-offender programs

- Currently under revision with final reading scheduled for the Autumn of 2013.
- Main difference with 2005 and 2013 are:
  - Referenced ISO standards where possible
  - Sleep current reduced from 20 ma to 5 ma
  - Addition of Electro Static discharge ISO 10605: 2008
  - Added requirements for accessories (Camera's etc.)
  - Clarified test methods for laboratories
  - Additional anti-circumvention tests
  - Standardization of event descriptions of the data log

EN 50436-2 : General preventive use

- Initial release in November 2005
- Currently under revision with final reading scheduled for the Autumn of 2013.
- Part 2 will now reference part 1 for applicable items

Key differences between Part 1 and Part 2

- Data memory is optional
- Retests are optional
- Recalls are optional
- Accuracy of the alcohol concentration for 0,75 mg/l is removed
- Temperature: New criteria for removable components (-20°C - +65°C)
- Temperature and supply voltage: -20°C - +70°C

TR 50436-3, EN 50436-4, EN 50436-5

- **TR 50436-3 : Guidance for decision makers, purchasers and users**

  Reference document and still under revision by committee

- **EN 50436-4 : Connectors for the electrical connection between the alcohol interlock and the vehicle**

  European commission discussion

- **EN 50436-5 : Instruments not having a mouthpiece and measuring breath alcohol for general preventive use**

  Work has been suspended

EN 50436-6 : Data security

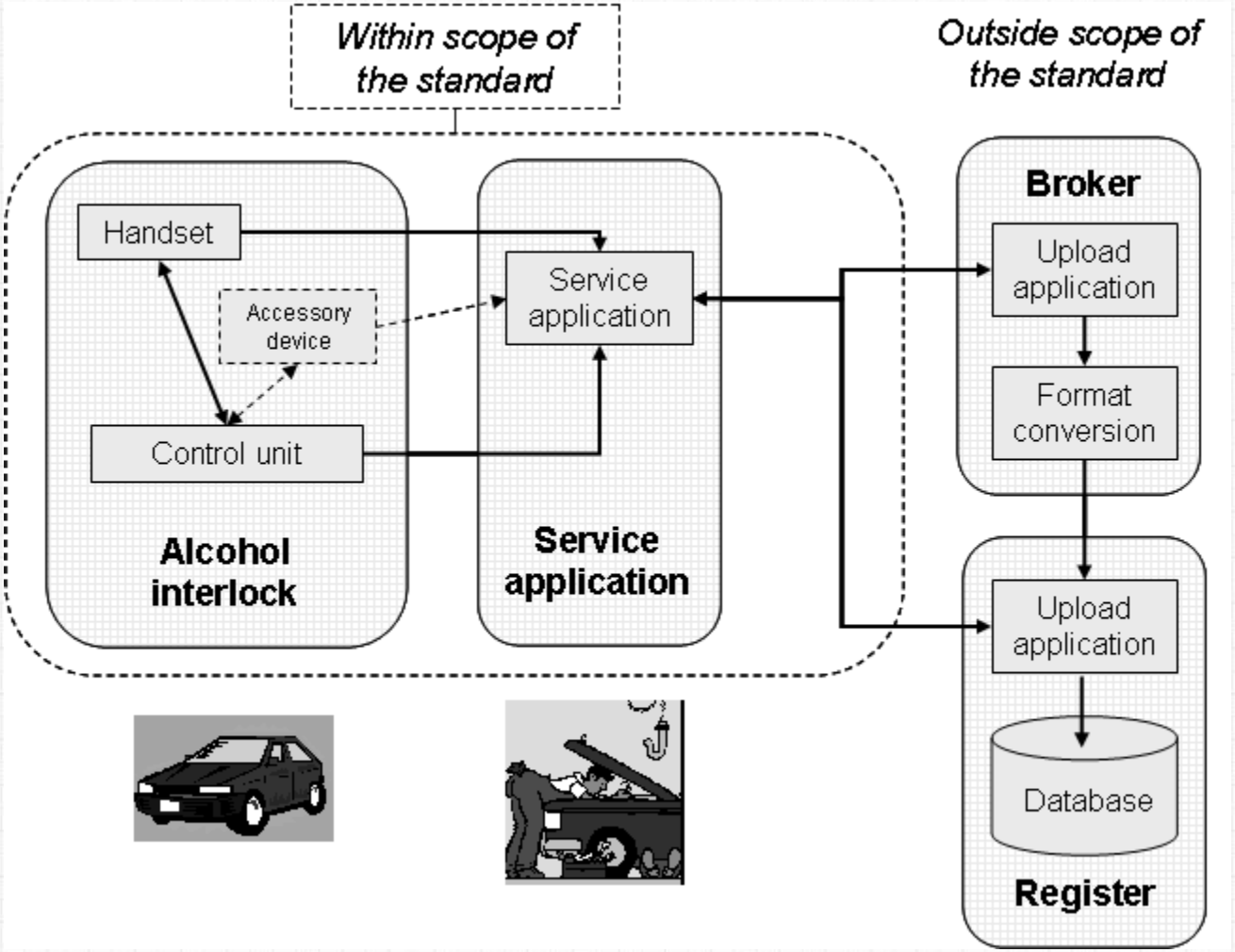
Mid of 2014: official publication foreseen

Intention:EN 50436-6 to be listed as Protection Profile“ under CCRA(worldwide)

- This European Standard applies to:
  - The alcohol interlock
  - The service application

- This European Standard does not apply to:
  - data security of the broker
  - data security of the register
  - storage of downloaded data
  - requirements for organizational processes, for example defining rights of access to the data.

EN 50436-6 : Data security



EN 50436-6 : Data security

Major security features

- The alcohol interlock is able to detect events (for example starting the vehicle engine or failed breath and store these events
- Authenticated service personnel can use the service application to read out these event records and send them onwards. The service personnel can also use the service application to delete the event records and erase the data memory
- All parts of the alcohol interlock protect the event records against unauthorized modification, deletion, insertion and disclosure

Threats for alcohol interlocks

Why is the data security important?

When a hacker looks at an alcohol interlock, he sees many ways to tamper / interfere / bypass.

When done right, this will not leave any trace.

These threats could influence:

- integrity of the alcohol interlock
- privacy of the driver
- the importance of the data log for the supervisors
- reputation of the alcohol interlock programme.

EN 50436-6 Protection Profile

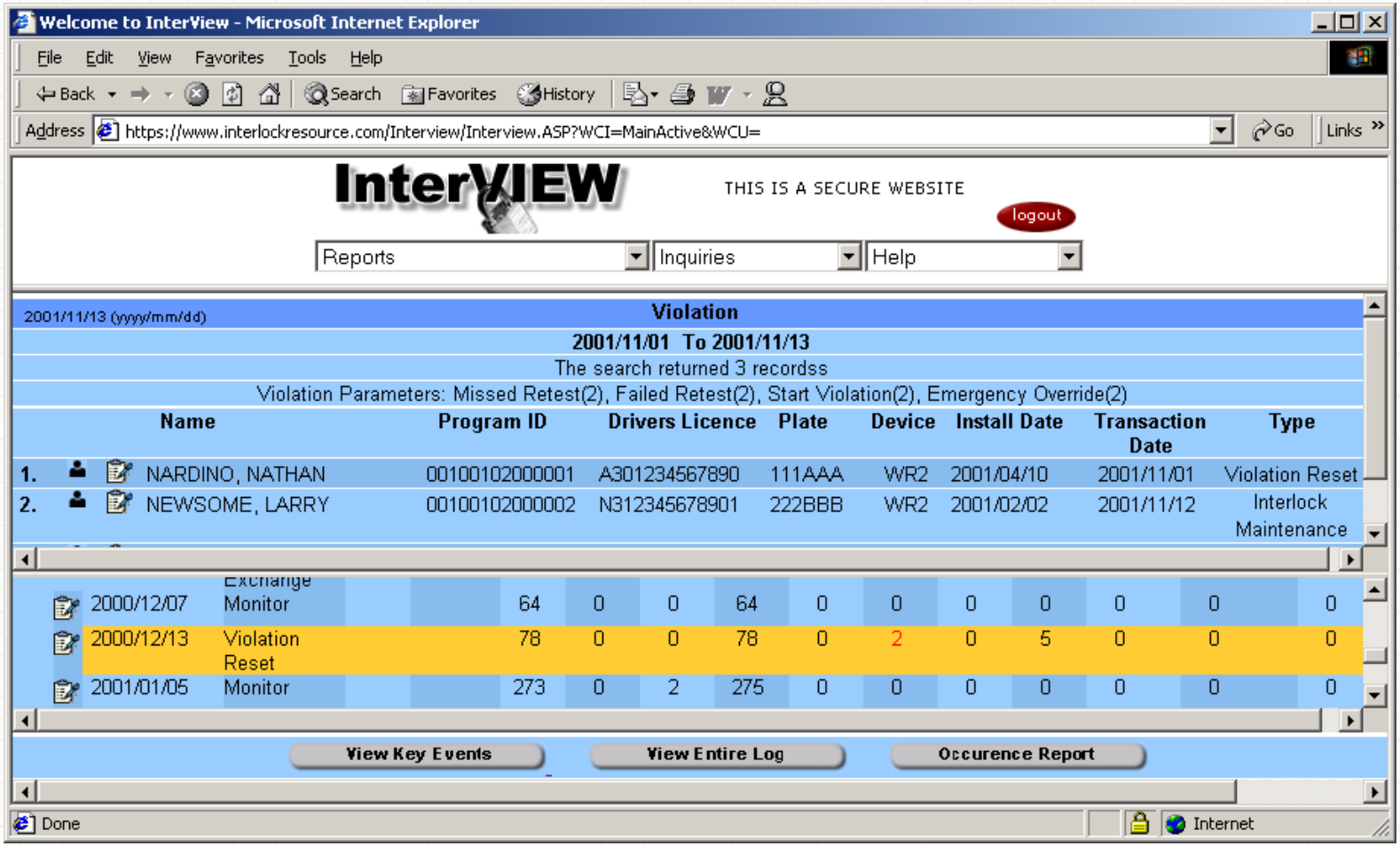
- **Advantages:**
  - High level of security

- **Disadvantages:**
  - Costly to develop
  - Costly to certify

EN 50436-6 : Data security

- **Sweden:**
  - Data encryption method left to the supplier
  - Event log information sent to the government agency by secure file transfer
- **Finland:**
  - Data encryption method left to the supplier
  - Government agency uses supplier online reporting system
- **Netherlands:**
  - Uses CENELEC protection profile
  - Event log information sent to the government agency by secure file transfer

Online reporting system



Technical issues of existing technologies

- **Driver:**
  - Warm up times: up to several minutes
  - Requires the driver to blow into the device
- **Fleet owner:**
  - Yearly calibration
  - Remains relatively expensive
  - Possibility of another person blowing into the device for the driver

Add on features

- **Camera:**
  - Takes a picture of the driver blowing into the device at the time of the test
  - Stores the image for future reference

- **Telematics:**
  - Transmits in real time alcohol results and vehicle location
  - Many suppliers of telematics are able to integrate with alcohol interlock manufacturers

- **Wi-Fi:**
  - Transmits data to fleet reporting systems upon returning to vehicle depot
  - Email or SMS alerts can be sent to fleet managers

Alcohol interlocks in Europe

European Commission

2013:
prepared for
EU Commission
DG Mobility & Transport

1.July 2013:
stakeholder meeting

15. April 2014:
officially published
by EU Commission

Alcohol interlocks in Europe

„*Policy option 2:*
Addressing the common technical and operational barriers

… in this policy option 2 the EU would take an active attitude in overcoming common technical and operational barriers to effective and widespread implementation of alcohol interlock programmes. This could for instance involve taking action for ensuring that retrofitting of vehicles with alcohol interlocks will continue to be possible in the future, also in new car models, …”

Alcohol interlocks in Europe

"Conclusions and Recommendations

"Four of these policy options show quite favourable benefit cost ratio's against the status quo policy option, namely:
- …
- Harmonisation of technical (standards, retrofitting) … that are present barriers to introduction of alcohol interlock programmes within the European Union.

This option shows the highest BC ratio, at 1.8 to 3.3 (sensitivity: 1.2 to 3.9)."

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