

# Safe and Sober

## Alcohol Interlocks in Europe

**Safe and Sober Seminar  
Belgian Federal Parliament  
5<sup>th</sup> September, Brussels**

# 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:  $-40^{\circ}\text{C}$  -  $+85^{\circ}\text{C}$
  - EMC (Electromagnetic Compatibility): ISO 7637
  - Electrical tests: ISO 16750
  - Vibration: ISO 16750
  - Drop Test
  - IP (Ingress protection): IEC 60529
  - Accuracy:  $\pm 0,02$  mg/l or  $\pm 15\%$  (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

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

Work has been suspended

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

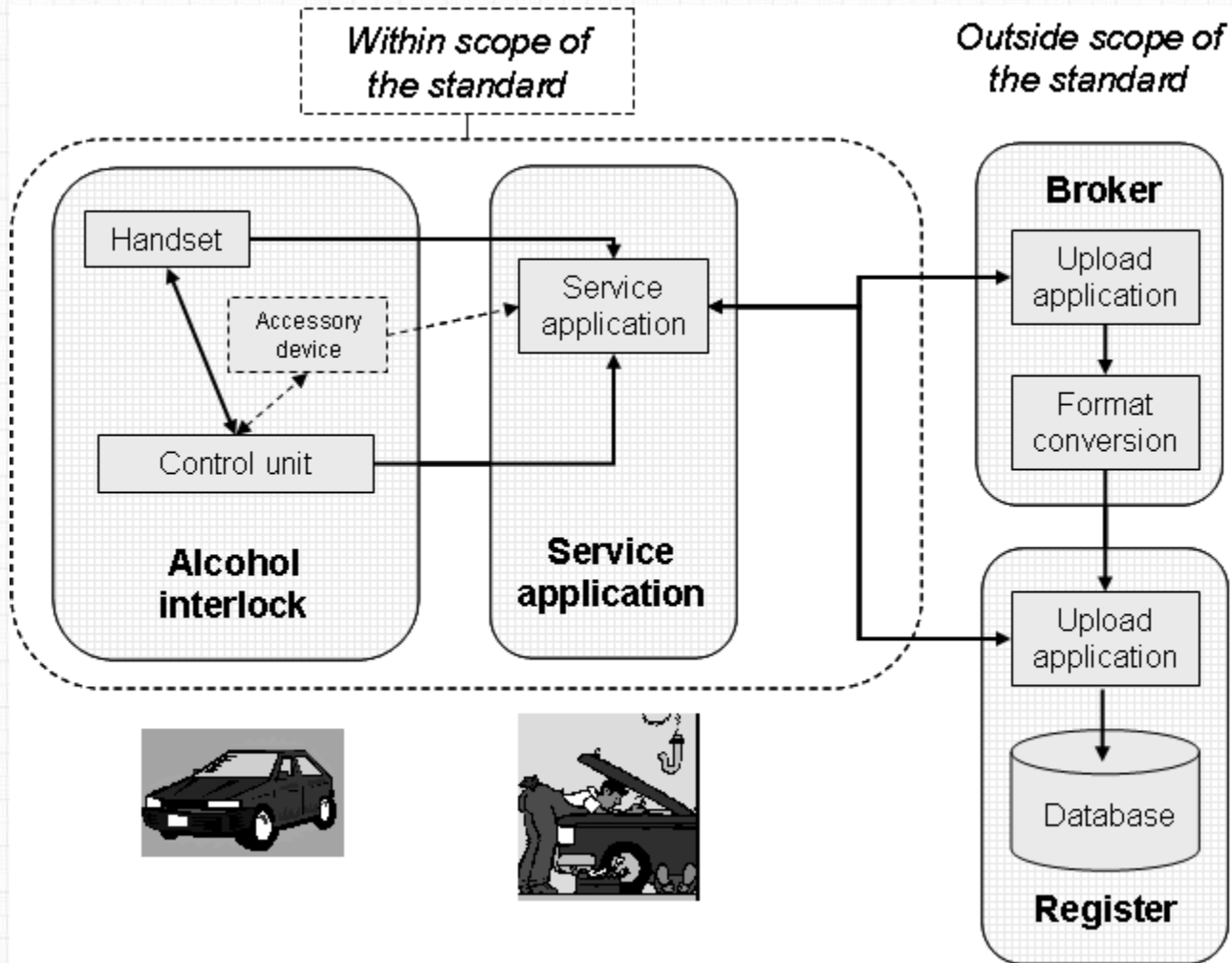
Work has been suspended

# EN 50436-6 : Data security

- 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

# 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

Welcome to InterVIEW - Microsoft Internet Explorer

Address: https://www.interlockresource.com/Interview/Interview.ASP?WCI=MainActive&WCU=

**InterVIEW** THIS IS A SECURE WEBSITE [logout](#)

Reports | Inquiries | Help

2001/11/13 (yyyy/mm/dd)

**Violation**

2001/11/01 To 2001/11/13

The search returned 3 records

Violation Parameters: Missed Retest(2), Failed Retest(2), Start Violation(2), Emergency Override(2)

Name	Program ID	Drivers Licence	Plate	Device	Install Date	Transaction Date	Type
1. NARDINO, NATHAN	00100102000001	A301234567890	111AAA	WR2	2001/04/10	2001/11/01	Violation Reset
2. NEWSOME, LARRY	00100102000002	N312345678901	222BBB	WR2	2001/02/02	2001/11/12	Interlock Maintenance

Date	Event	Count	0	0	64	0	0	0	0	0	0	0	0
2000/12/07	Exchange Monitor	64	0	0	64	0	0	0	0	0	0	0	0
2000/12/13	Violation Reset	78	0	0	78	0	2	0	5	0	0	0	0
2001/01/05	Monitor	273	0	2	275	0	0	0	0	0	0	0	0

View Key Events | View Entire Log | Occurrence Report

Done | Internet

# 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



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