Safe and Sober

Alcohol Interlocks in Europe

May 22, 23, 2013
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

- 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
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

Within scope of the standard

Handset

Accessory device

Control unit

Alcohol interlock

Service application

Outside scope of the standard

Broker

Upload application

Format conversion

Upload application

Database

Register
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

**THIS IS A SECURE WEBSITE**

![InterVIEW](https://www.interlockresource.com/Interview/Interview.ASP?WCI=MainActive&WCU=

### 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)

<table>
<thead>
<tr>
<th>Name</th>
<th>Program ID</th>
<th>Drivers Licence</th>
<th>Plate</th>
<th>Device</th>
<th>Install Date</th>
<th>Transaction Date</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NARDINO, NATHAN</td>
<td>00100102000001</td>
<td>A301234567890</td>
<td>111AAA</td>
<td>WR2</td>
<td>2001/04/10</td>
<td>2001/11/01</td>
<td>Violation Reset</td>
</tr>
<tr>
<td>NEWSOME, LARRY</td>
<td>0010002000002</td>
<td>ND12345678900</td>
<td>222EED</td>
<td>WR2</td>
<td>2001/02/02</td>
<td>2001/11/12</td>
<td>Interlock Maintenance</td>
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</table>

### Log Entries

<table>
<thead>
<tr>
<th>Date</th>
<th>Type</th>
<th>Status</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000/12/07</td>
<td>Exchange</td>
<td>0</td>
<td>Monitor</td>
</tr>
<tr>
<td>2000/12/13</td>
<td>Violation</td>
<td>0</td>
<td>Reset</td>
</tr>
<tr>
<td>2001/01/05</td>
<td>Monitor</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Online reporting system

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-04-12</td>
<td>10:28:16</td>
<td>Ignition On</td>
</tr>
<tr>
<td>2013-04-12</td>
<td>10:29:16</td>
<td>Motor Running</td>
</tr>
<tr>
<td>2013-04-12</td>
<td>10:29:16</td>
<td>*** Start Violation</td>
</tr>
<tr>
<td>2013-04-12</td>
<td>10:29:25</td>
<td>Retest Request</td>
</tr>
<tr>
<td>2013-04-12</td>
<td>10:35:25</td>
<td>*** Missed Retest</td>
</tr>
<tr>
<td>2013-04-12</td>
<td>10:45:41</td>
<td>Running Retest Pass BrAC 0.00 g/l</td>
</tr>
<tr>
<td>2013-04-12</td>
<td>10:46:53</td>
<td>Ignition off</td>
</tr>
<tr>
<td>2013-04-12</td>
<td>10:46:55</td>
<td>Motor Off</td>
</tr>
<tr>
<td>2013-04-13</td>
<td>02:13:52</td>
<td>Ignition On</td>
</tr>
<tr>
<td>2013-04-13</td>
<td>02:14:21</td>
<td>Motor Running</td>
</tr>
<tr>
<td>2013-04-13</td>
<td>02:14:21</td>
<td>*** Start Violation</td>
</tr>
<tr>
<td>2013-04-13</td>
<td>02:14:31</td>
<td>Retest Request</td>
</tr>
<tr>
<td>2013-04-13</td>
<td>02:20:31</td>
<td>*** Missed Retest</td>
</tr>
<tr>
<td>2013-04-13</td>
<td>02:33:52</td>
<td>Ignition Off</td>
</tr>
<tr>
<td>2013-04-13</td>
<td>02:33:53</td>
<td>Motor Off</td>
</tr>
<tr>
<td>2013-04-17</td>
<td>15:02:38</td>
<td>Ignition On</td>
</tr>
<tr>
<td>2013-04-17</td>
<td>15:03:01</td>
<td>*** Standing High Fail BrAC 0.38 g/l</td>
</tr>
<tr>
<td>2013-04-17</td>
<td>15:03:01</td>
<td>Enter BrAC Lockout State</td>
</tr>
<tr>
<td>2013-04-17</td>
<td>15:04:01</td>
<td>Exit BrAC Lockout</td>
</tr>
<tr>
<td>2013-04-17</td>
<td>15:04:17</td>
<td>*** Standing Fail BrAC 0.37 g/l</td>
</tr>
<tr>
<td>2013-04-17</td>
<td>15:04:17</td>
<td>Enter BrAC Lockout State</td>
</tr>
<tr>
<td>2013-04-17</td>
<td>15:34:17</td>
<td>Exit BrAC Lockout</td>
</tr>
</tbody>
</table>
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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