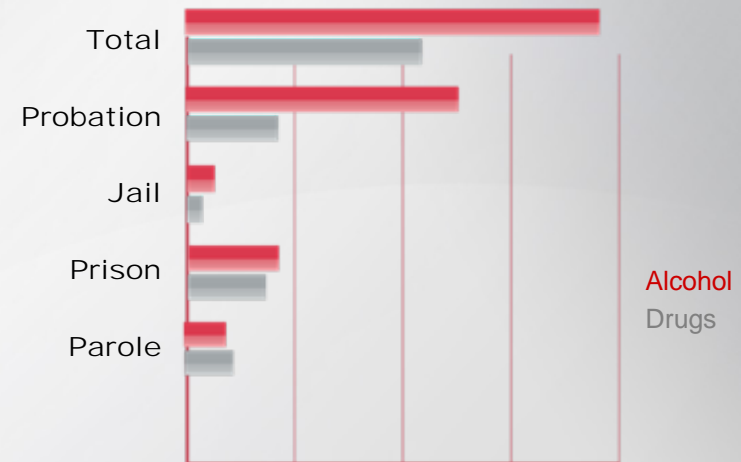# mEms 3000

Remote Alcohol Testing

May 2009

Alcohol Testing - Background

- In 1996 estimated 5.3M convicted offenders, nearly 2M had been drinking alcohol*
- In 1997 an estimated 513,200 offenders were on probation or in jail or prison for driving while intoxicated by alcohol*
- Since then numbers have increase, but not updated stats.

On an average day in 1996, corrections authorities supervised an estimated 5.3 million convicted offenders. Nearly a million, about 36% had been drinking alcohol when they committed their conviction offense.

Criminal justice status

Alcohol
Drugs

Number of offenders in millions using alcohol or drugs at the time of the offense

Alcohol Testing – US Background

- In 2007, 18.6 million persons aged 12 or older were classified with dependence on or abuse of alcohol. This represents 7.5% of population.

- 40% of people convicted of violent crimes had been drinking at the time of the event.

- Driving under the influence of alcohol (DUI) statistics:

  → In 2007, an estimated 13,000 people died in drunk driving related crashes

  → On average someone is killed by a drunk driver every 40 minutes

  → About 3 in every 10 Americans will be involved in an alcohol-related crash at some time in their lives

  → 75% of the fatal crashes between midnight and 3 AM involve alcohol.

Alcohol Testing - Background

- In home alcohol testing is used mainly for DUI (Driving Under Influence) and DWI (Driving While Intoxicated) cases
- Main challenge is twofold -
  - Verification of offender's identity
  - Definitive alcohol level
- Total market in the US is estimated at 20,000 cases between 3 solutions:
  - Home monitoring - Sobrietor by BI, ViCap by G4S, MEMS by ET
  - Ignition interlock – multiple vendors
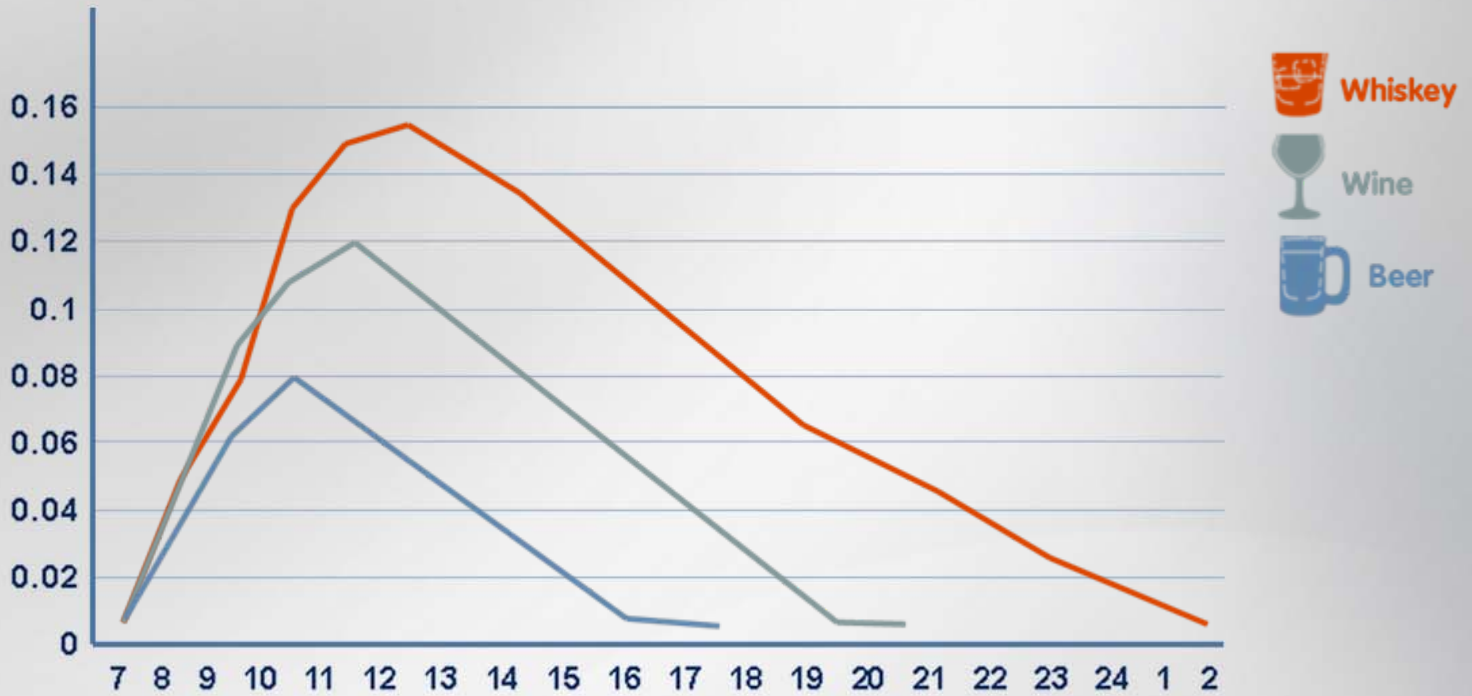 - Transdermal statistical testing – SCRAM, ActSoft and TAD by BI

Alcohol Testing Measurements

- Quickly absorbed into the bloodstream
- Blood Alcohol Concentration (BAC)
  - Measured in grams per 100 ml of blood
  - >0.4 BAC, basic body systems begins to collapse
  - Legal BAC level: 0.08 - 0.10
- Accurately traced in:
  - Blood
  - Urine
  - Breath

BAC Elimination Rate per 3 glasses

Alcohol Testing – European* Background

- ⦿ The EU is the heaviest drinking region of the world
- ⦿ Alcohol is associated with crime – and especially violent crime – across the EU
- ⦿ An estimated 7m adults report being in fights when drinking in the past year
- ⦿ 16%-71% of domestic or intimate partner violence has been linked to alcohol across Europe

	Country	% linked to alcohol	Type of link[2]
All crimes	Belgium	20	Intoxication
	England & Wales	25	Under-the-influence
	Finland	47	Intoxication, prisoners
	Germany	7	Under-the-influence
	Hungary	35	Intoxication
	Latvia	34	Under-the-influence
	Lithuania	21	Under-the-influence
Violent crime	Belgium	40	Intoxication
	England & Wales	48	Under-the-influence
	Estonia	60-70	Alcohol-related
	Finland	66	Intoxication, prisoners (assault)
	France	25	1973 data; Alcohol-related (assault)
	Germany	24	Under-the-influence
	Norway	80	Intoxication
	Spain	42	Under-the-influence, victims in A&E
	Sweden	86	Intoxication
Robbery	England & Wales	19	Under-the-influence
	Finland	53	Intoxication, prisoners
	Norway	40	Intoxication
	Poland	40	Intoxication
Sex offences / Rape	England & Wales	58	Alcohol-related
	Finland	49	Intoxication, prisoners
	Germany	29	Under-the-influence
	Norway	60	Intoxication

Source: Alcohol in Europe, A report for the European Commission, June 2006

Alcohol Monitoring - mEms 3000

- ⦿ Remote testing of alcohol level, with **definitive verification** of the subject
  - ➡ Electro-Chemical Breath Alcohol Testing (BAT)
  - ➡ Verification based on picture (jpg) taken while performing the test
    - - Compared to reference picture stored in the monitoring station
- ⦿ Optional integration of **RF** presence/absence monitoring

Alcohol Monitoring - mEms 3000

- ◉ Tailored for law enforcement needs
  - ➡ Solid and tamper proof mouthpiece
  - ➡ Accumulation of tests in memory
  - ➡ Tamper events
    - - Power and phone connections
    - - Tilt
  - ➡ Automatic retesting
    - - Based on system parameters
- ◉ Multiple communication methods
  - ➡ Traditional landline
  - ➡ GSM based unit using GPRS