



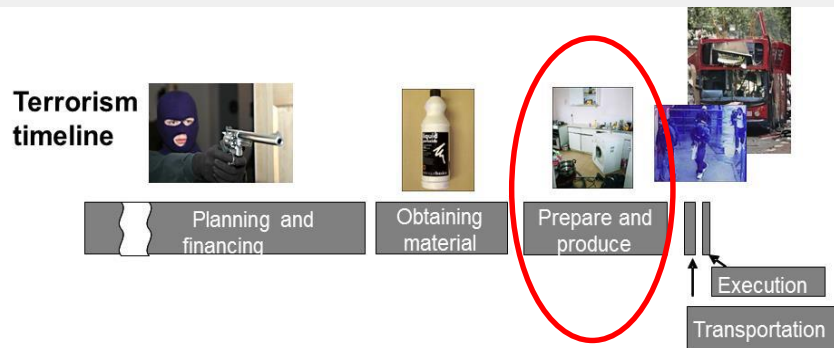
SEC-10-FCT-2017

Integration of detection capabilities and data fusion with utility provider's network

INTERCEPT

Integration of Networked sensors Targeting Enhanced Reconnaisance of illegal Chemicals and Explosives Precursors Threats

Hans Önnerud, FOI-Grindsjön



Utmaning

- Varför?
 - Lokalisering av bomb- eller narkotikafabrik i stadsmiljö
 - Tidig varning → preventivt fokus
- Vad?
 - Sensornätverk - datafusion
 - Detektion av...
 - Prekursorer och explosivämnen - HME
 - Narkotika
 - Andra ämnen av fara för samhället
- Var?
 - Avloppssystem
 - Elnät - energiförbrukning
 - Luft
 - Mobila plattformar
 - Andra platser och ytor

BBC Sign in News Sport Weather Shop Earth Travel More

NEWS

Home Video World UK Business Tech Science Magazine Entertainment & Arts

[Science & Environment](#)

Sewer sensors to sniff out bomb ingredients

By Rebecca Morelle
Science Correspondent, BBC News, Stockholm

30 September 2014 | [Science & Environment](#) [Share](#)



THINKSTOCK

Sewers could have bomb-sniffing sensors installed

Sewer sensors sniff out signs of bombs and drugs

Bomb makers and chemists cooking up crystal meth better watch out. A sewer system full of chemical sensors could soon be sniffing out their homemade labs



Small a rat...
(Image: Dan Selkouri)

BOMB-MAKERS or chemists with *Breaking Bad* crystal-meth labs better watch out. A sewer system full of chemical sensors could sniff out their homemade labs as part of a €64.5 million European Union-funded research programme called *Emphasis*.

Process och ansökan

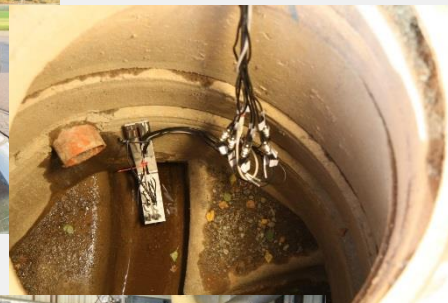
- 4 års projekt
- Indikativ budget: 8 M€
- Ett start-konsortium på plats:
 - FOI
 - TNO (Nederländerna)
 - Fraunhofer ICT (Tyskland)
 - ENEA (Italien)
 - CEA (Frankrike)
- Uppstartsmöte Bryssel 8 November
- Ytterligare behov
 - Polisiära myndigheter
 - Samhällsoperatörer
 - Etiska och juridiska kompetens
- Operativ plan och tillstånd för att verka i valda städer med utvalda sensorer skall vara klart under ansökningsfas
- Ett forskningsprojekt – Inte polisiär aktivitet!

Tidigare arbeten

Explosives



Drugs



Mål – mätningar i fält

- Identifiering och utplacering av sensorer
 - Selektiva, känsliga, robusta, kostnadseffektiva
 - Hög TRL-nivå
- Avlopp – smutsig miljö
- Luft - bara flyktiga ämnen - hotberoende
- Partikelspår på ytor
- Experimentet ska utföras över 2 år
- Nätverksoperatörer, polis, bombgrupper från minst 3 medlemsstater
- 2 städer
 - >1 000 000
 - 100 000 – 300 000



Specific Challenge

Research undertaken in recent years has proposed innovative approaches for the detection of precursors of explosives, drugs, and more generally speaking substances threatening the security of the citizens.

Such approaches often require the installation of networks of sensors throughout urban areas.

Utility networks, which are well developed in such areas, could be both sources of information through the analysis of the substance that they transport/provide (e.g. energy consumption, characteristics of used waters) or of their environment (e.g. quality of air, etc.).

They can constitute networked (mobile) platforms for sensors, but this potential remains largely untapped

Skall- och börkrav 1(2)

- Proposals should address the deployment of detection systems in large and medium cities, in existing networks, or a combination of such networks, for instance for the detection of explosive precursors and illegal chemicals (drugs).
- Proposals shall address sewage networks and quality of air monitoring networks, and may address other networks.
- The experiment should last a significant period of time (at least two years)
- Proposals should also provide for a mobile platform equipped to ascertain the composition and location of suspicious measurements, once data have been provided by the networked detection systems

Skall- och börkrav 2(2)

- Proposers for this topic should look for an enhanced SME participation
- The outcome of the proposal is expected to lead to development up to Technology Readiness Level (TRL) 7 to 8 for the sensors deployed; 6 for the control and information system, and the mobile platform
- Proposals should provide for the prototype of a system controlling the detection systems and capable of fusing data provided by a variety of such networks