

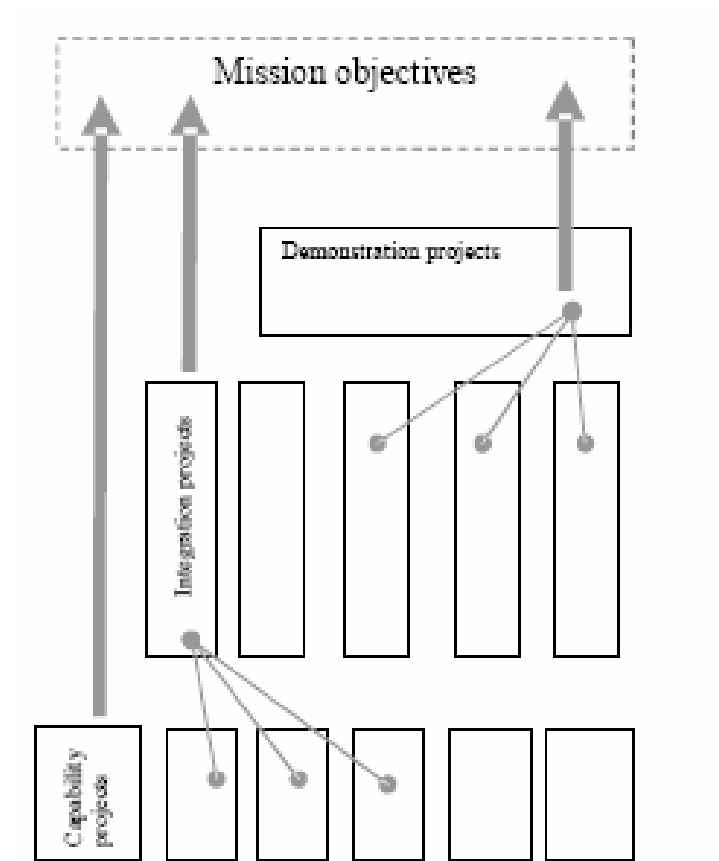
New technologies and security of Urban transport

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TNO | Knowledge for business



Workshop mass transportation



General

- Urban transport
 - Large variety
 - Complex
 - Many nodes
 - (Too) many people
 - Open environment
- No 100% guarantee is possible
- No single solution

Approach

- Risk-based
 - Incidents will happen
 - “Contain” the effects
- Link with other systems
 - E.g. logistics, communications, crime reduction, ...
 - Cost-effectiveness
- End-to-end solutions
 - Layers of protection
- Modularity
 - Optimise accessibility and implementation
 - Normal transport or one event
- Human interfaces
 - Information
 - Social context

Risk based approach

- Information based operations
 - Optimise information for operator
 - Intervention optimisation (gradual)
 - Historical database
 - Continuous learning cycles

- Minimal interruption of the normal processes

New technologies

- Better detection of CBRNE
- Longer distances
- Smaller quantities
- New approaches
 - EU 7FP: LOTUS, dispersed detection systems
 - mm wave: abnormal goods carried by people
 - Detect at different locations (tickets, teller machines, ...)

New technologies

- Better design of infrastructures and transport vehicles
- Redundancy in design
- Fast recovery
- Control of flow of people
- Emergency operations

New technologies

- Intervention technologies
- How to act in a large group of people?
 - How to stop a suicide bomber?
- How to separate the injured/infected people?

New technologies

- Abnormal behaviour of people (and goods)
- Behaviour
 - Movements
 - Physiological parameters
 - Speech
 - Absence of behaviour
 - Interpretation is crucial
- Tracking and tracing
- Recognition

New technologies: it is all about people

- Communication is of crucial importance
 - Acceptance
 - Perceived security
- Different cultural background
 - Different responses to a threat situation
- Human cognitive limitations
 - Human cognition and behaviour under critical conditions
 - Social context
 - Construction of a COP and intelligence of the alarm management