Let’s Construct Europe’s Future
With Innovative Buildings and Infrastructures
Construction and Societal Challenges

Radisson Blu Centrum Hotel - WARSAW
04 / 05 October 2011

Developing Mobile 3D Data Management Solution for Construction SMEs
Johan Vyncke & Filip Van Rickstal, BBRI
Frank Faraday, FIEC
Background: Mobi3Con

- Research for SME associations/groupings

- Partners
  - Research partners
    - Estonian Innovation Institute (EII)
    - Norwegian Technological Institute (TI)
  - SMEs from Estonia, Germany, Austria, Turkey
  - SME – associations
    - FIEC
    - BBRI
Project result is reasonably priced ruggedized and powerful portable solution for 3D drawing and BIM information exchange on construction site with indoor navigation possibilities to connect everyday construction work with BIM data and ERP systems.

- Ruggedized for construction use
- UWB positioning with ~1 cm accuracy
- Construction drawing management (CAD/3D)
- 3D data and drawing management and usage on-site
- Task management
- ...
2 essential features

• Indoor positioning system

• On site exchange of information
Outdoor

Positioning
Outdoor

Geotagging
Outdoor Navigation
Outdoor

High precision works
AMERICAN MUSEUM OF NATURAL HISTORY EXPLORER

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**KEY FEATURES**

- **PERSONAL GPS**
- **TURN-BY-TURN DIRECTIONS**
- **DIGITAL EXHIBITS**
- **PRE-LOADED TOURS**
- **CUSTOM TOURS**
- **FOSSIL TREASURE HUNT**
- **SHARING THE EXPERIENCE**
- **BOOKMARKING**

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Indoor Positioning, Use

- Indoor GPS

- Location based information

→ Exchange of information
Information exchange, Use cases

• Structural works
• Finishing works
• Facility management
• Metros and tunnels
Facility Management: what

- Exploitation of constructions
- Cleaning
- Small repairs, replacements, painting and maintenance
- Management of furniture and IT material
- Health inspection
- Management of patrimony
Facility Management: Who

- Owner / principal
- Cleaning agencies
- Security services
- Manager and technical maintenance service of public buildings: schools, hospitals or station
- Persons in charge of art patrimony
Facility Management: Needs

- Cost estimation and planning of work
- Directions for technicians
- Consulting data sheets
- Mapping out patrimony, illustrating with location tagged photo’s
- For real estate agents: survey of buildings
Facility Management: M3Con

- Indoor GPS

- Exchange of location based information
  - Retrieving information
  - Feeding information into the model (BIM!)
Facility Management: M3Con

- Linking photos or other info to location
- Using RFID
  - Security firms
  - All kind of identification
  - Furniture
- Handling of deliveries
- Using positioning for measuring?

➔ Compatibility with external equipment
Measurix Total station
... Within the next five years, we'll make it possible for businesses to deploy the next generation of high-speed wireless coverage to 98 percent of all Americans. This isn't just about faster Internet or fewer dropped calls. It's about connecting every part of America to the digital age. It's about a rural community in Iowa or Alabama where farmers and small business owners will be able to sell their products all over the world. It's about a firefighter who can download the design of a burning building onto a handheld device; a student who can take classes with a digital textbook; or a patient who can have face-to-face video chats with her doctor. ...