

DE NAYER
SINT-KATELIJNE-WAVER

UZ LEUVEN

KATHOLIEKE UNIVERSITEIT LEUVEN

KHK

Case Study: Camera System for Fall Elderly
Fall Detection

Toon Goedemé
Mieke Deschodt

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- Introduction and project description (Toon Goedemé)
- Clinical study: elderly falls (Mieke Deschodt)
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- Practical implementation considerations (Toon Goedemé)
- Fall detection algorithm developments (Toon Goedemé)
- Discussion

Project description

- IWT-Tetra project
  - IWT
  - Knowledge centres
  - Users commission

Project consortium

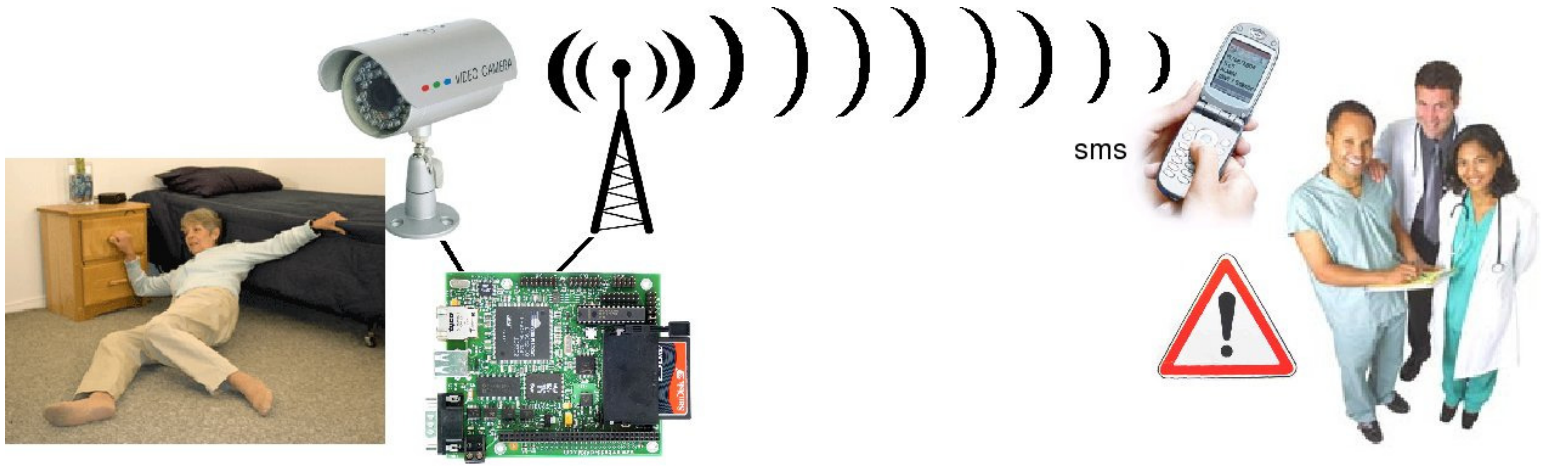
De Nayer Instituut
Hogeschool voor Wetenschap & Kunst, Sint-Katelijne-Waver
research group EmSD
Toon Goedemé, ***Jonas Van den Bergh***

KHK
Katholieke Hogeschool Kempen, Geel
Research group MOBILAB
Bart Vanrumste, ***Glen Debard***

K. U. Leuven / U. Z. Leuven
Health Care / Geriatrics
Centre for Health Services and Nursing Research
Koen Milisen, Eddy Dejaeger, ***Mieke Deschodt***

Project description

- Camera system installed in elderly people's homes
- Autonomous detection of fall incident
- Alarms caregivers

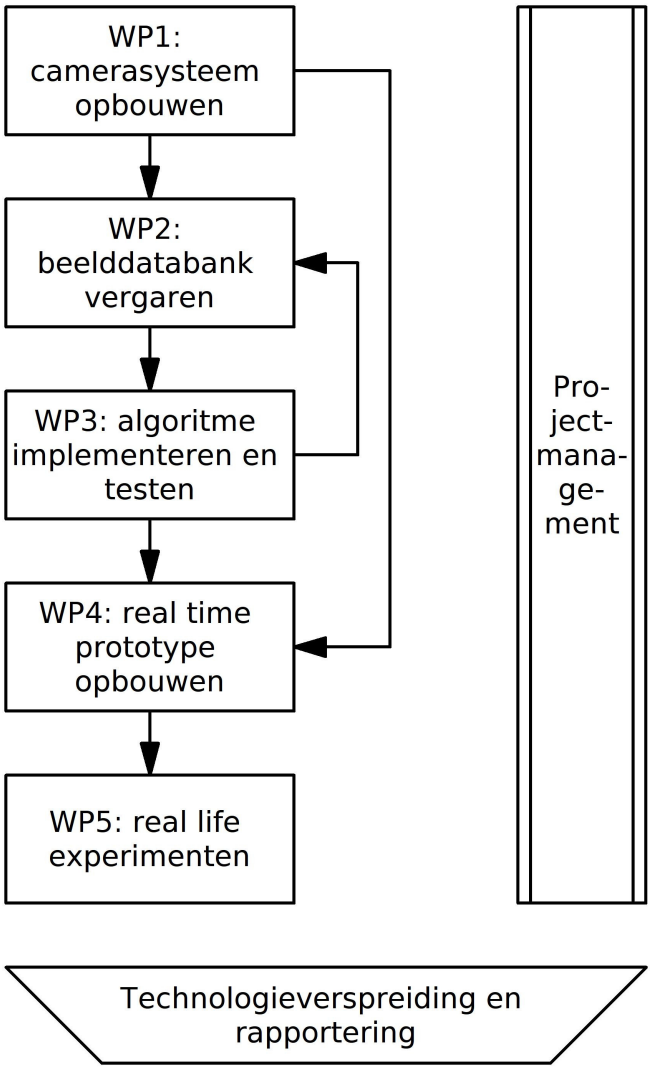


Project description

- Advantages camera system
  - alarm independently generated, not relying on elderly's initiative
  - Care givers arrive quickly, the **time the victim is lying on the floor** is short
  - system can decrease **fear of falling** and let people stay longer in their homes
  - **contactless**, can not be forgotten
  - **Analysis** of fall incident possible afterwards using video data

Project planning

- **WP1:** make an **experimental vision system** operational
- **WP2:** build a **data base** of labelled **videos**, containing falls and non-falls of **simulants** and real **elderly people**
- **WP3:** study, implement, test and refine a **fall detection algorithm** from literature.
- **WP4:** implement algorithm on an **embedded prototype** platform enabling processing images in real-time.
- **WP5:** perform **extensive experiments** with this prototype, observing selected elderly with a high fall frequency for longer periods of time.



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