Enhancing Longer Living in Smarter Places
The Netwell & CASALA centres collaborate with governmental and non-governmental agencies, industry and academic institutes to:

Develop new ideas that enhance the quality of life and well-being of older people and those who care for them, through more integrated community-oriented services, more sustainable home and neighbourhood design, and more affective and age-friendly technologies.
Stimulate Innovation & Competitiveness - a Multi-tier Living Lab

CAVE Simulator and technical workshop / laboratory

Great Northern Haven – 16 ‘Smart Aware homes’

LAFC – County-wide innovation infrastructure with over 1,200 pre-surveyed older adults
CASALA Living Lab Partners

Health Service & Local Authority
- Primary Care Centre
- Falls Clinic
- Dementia Service Providers
- Sustainable Energy Authority of Ireland

Industry & SME
- Fujitsu Ireland
- Rigney Dolphin
- SMEs

Older Adults
- Health Service Executive
- Older Adult Service Brokers
- Men’s Sheds
- Good Morning Service
- Older Adult Forum
- Volunteer Network
- Person Centered Dementia Service Provision
- iPad Classes
- User Centered Design
- Research volunteers
- Community-based Deployments
- Implementation & Evaluation of Age Friendly Technologies
- Smart Home Analytics and Services

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- Smart Home Analytics and Services
But who is this data being collected for?
Monitoring and Feedback – Closing the Loop
GNH - A Highly Sensed Environment & Home

- 2,300 sensors and actuators in GNH
- Completed in June 2010
- Over 8 million data records per month
- Engaged residents inform design, development and evaluation of solutions and services
- Partners include local authority, health service, local service providers, SMEs and industry

Real People + Real Live = Real-World Data
CASALA Living Lab – Wider Community Deployments

CABIE
Context Aware Brokering and Inferencing Engine: A cloud-based sensor agnostic platform translating raw data to health information (300+ users)

Home Sweet Home
2 Year RCT telehealth tech for frail community dwelling older adults (60 users)

CaraWellness
Care platform for older adults combining various health technologies and providing feedback and alerts to the person, carers and clinicians (65 users)

Technology Enhanced Falls Risk Assessment
Investigating the role of technology to support clinic-based falls risk assessment and the development of a community based platform (18 users)

YourWellness
Health and wellness self-management iPad application (15 users)

Community Energy Monitoring System
Monitoring real-time energy usage, using a cloud-based service, and processing the data for feedback to service users and community planners (50+ users)
Health Metrics – Extracting Higher Level Information

Deriving higher level information from raw sensor data
• Sleep disturbances, bed exits, activity levels, time spent outside the home, room transitions

Investigating methods of highlighting abnormal daily patterns
• Altered sleep/wake and activity patterns

Inferring self-report health status from ambient sensors
• Anxiety, cognition, depression, loneliness, sleep quality
Data Visualisations – Extracting Daily Routines
Data Visualisations – Variations in Daily Routines

The image shows a circular diagram representing variations in daily routines. The diagram uses different colors to represent various locations:
- **En-Suite**
- **Bedroom**
- **Outside**
- **Kitchen**
- **Living**

The diagram is annotated with time stamps at the bottom, indicating the timing of activities across different days.
Feedback Applications

- Walk Time per Day
- Total Activity per Hour
- Activity over Previous Week

Please select one of the gait events below:

- Left Leg Sensor
- Right Leg Sensor

- Archival
  - Messages
  - Videos
  - Images
  - Personal

- Sleep Improvement: Exercise early. Exercise can help you fall asleep faster and sleep more soundly—as long as it’s done at the right time. Try to finish ...

- Mood Improvement: Establish a Soothing Pre-Sleep Routine. Ease the transition from wake time to sleep time with a period of relaxing activities an...

- Pulse
- Blood Pressure
- Activity Level
- Wellness

- Real time
- Consumed
- Produced
- Community

Current Consumption (since last update)

- Electricity: 6 kWh/h
- Gas: 0 kWh/h
- Water: No Data

Electricity Produced (yesterday)

- Solar Panel

Outside: 16°C
Inside: 21°C
Methodologies
• Convincing industry partners that design should be user-centred, not company-centred
• Managing cohorts
• Scaling up deployments
• Evaluating success
• Continuation past research trial / pilot
  – Particularly on collaborative projects. Managing IP can be difficult
End-user involvement – real people, real-world data, longitudinal

Not just monitoring – provide feedback to end users of AAL technologies, empowerment

Not just technology! AAL needs to be integrated with service provision
  – E.g. CASALA advocating for advanced nurse practitioner who is aware of available technology

Develop, drive and educate the market
Progress since last year

• New spin-out company – CarezApp
  – Selling to home-care companies
• Social Enterprise recently set up
  – Louth Age Friendly Company
• Sustainability of groups
  – Small subscription charges
• New 3-year project with large multinational company
Thank You

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