



Vision
on
intelligence in assisted living
and
building automation

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on
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Important references :

Fraunhofer Institut

Ambient Assisted Living Association

Lonmark Association

University of Extremadura

KNX Association

Automated Buildings

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1. Intelligence in assisted living ?
2. Intelligence in buildings
3. A vision of total integration

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1. Intelligence in assisted living :

Objectives

- Extend the time living in the own home
- Support functional capability
- Promote a better and healthier life style
- Enhance security, prevent isolation
- Support family, carers and their organisations
- Increase efficiency of used resources

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1. Intelligence in assisted living :

Competences

- Human-Computer Interaction & Acceptance
- Micro-electronics and sensors
- Mobile Communication
- Software Engineering

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1. Intelligence in assisted living :

Competences : Human-computer Interaction

- Usability engineering and User modeling
- Flexibility and adaptivity of interfaces
- Acceptance of level of technologification
- Data collection, monitoring routines, detection defections
- Acceptance of Big Brother

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1. Intelligence in assisted living :

Competences : Micro-electronics and sensors

- Low power systems
- Energy production and saving
- Static sensors
- Dynamic sensors
- Ambient sensors

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1. Intelligence in assisted living :

Competences : Mobile communication

- Active and passive mobility
- Ad Hoc Networking
- Adaptive routing
- Security and localization services
- Guarantees and continuity of services

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1. Intelligence in assisted living :

Competences : Software Engineering

- Dynamically reconfigurable architecture
- Interoperability
- Flexible, dependable open source
- Security and privacy

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1. Intelligence in assisted living :

Conclusion on competences :

Very high demands on

- User acceptance
- Variety of user interfaces
- Quality

need to be translated

towards an overall submissive system

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1. Intelligence in assisted living ?
- 2. Intelligence in buildings**
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2. Intelligence in buildings :

there is more

and more

but

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2. Intelligence in buildings :

Every one brings on the own supreme intelligence

- Every technical system in the building
- Every manufacturer
- Every market

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2. Intelligence in buildings :

Every technical system brings on his own supreme intelligence

- Security
- Technical alarm
- Audio visual
- Household appliances
- Blind, solar and automatic window control
- Metering and monitoring management
- Acces control
- HVAC
- Lighting control

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2. Intelligence in buildings :

Most manufacturers still bring on their own supreme intelligence

Starting from their own

- Technical strongholds
- Technical restrictions
- Marketing and niche networks
- Bi- or multilateral partnerships

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2. Intelligence in buildings :

Every one brings on the own supreme intelligence
and puts it all on the desk of the architect and planner

- Result :

Choices are made based on what manufacturers offer
and
that is not necessarily what the end user needs really

- Conclusion :

Many building specifications are written by many manufacturers

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2. Intelligence in buildings :

Every part of the technical planning accepts different intelligence and puts it all in the building

- Because of :

There are still stiff burden between the different techniques

Most engineer-planners are too specialized

The executing contractors are specialists in one or two techniques

- Conclusion :

Nobody takes responsibility for bordercrossing integration

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2. Intelligence in buildings :

Is there a any possibility of shared intelligence

for

all manufacturers

and

all technical systems

?

If we wait on the manufacturers : On Godot ?

If we wait on the technical possibility : Let's start !

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2. Intelligence in buildings :

Yes, there are already shared intelligence platforms
that can help to construct an overall platform :

X10 (230V)

DigitalStrom (230V)

EnOcean (RF)

Zigbee (RF)

LON (Bus)

BACNet (Bus)

KNX (Bus)

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2. Intelligence in buildings :

3 BUS Standards are high level information models (WHAT) :

BACNet : ASHRAE

LON : Echelon chip design

KNX : EIB

Why not express them in XML and make all 3 compatible with the emerging Web services architecture (HOW).

High level
Cross platform
Cross discipline
Multi-vendor

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2. Intelligence in buildings :

1 Information platform

High level

Cross platform

Cross discipline

Multi-vendor

is only possible with the official recognition of the function of

INTEGRATOR
of all Building Intelligence

for

responsibility

usability

energy saving

hardware compatibility

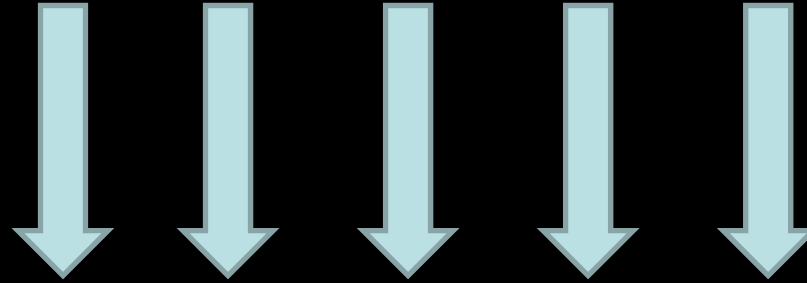
hardware multifunctionality

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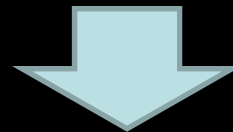
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2. Intelligence in buildings
- 3. A vision of total integration**

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**Ambience
Integrator**

INTEGRATED PLATFORM OF AMBIENT ASSISTED LIVING



Human Technology Translator

ASSISTED LIVING APPLICATIONS



Practical Technology Translator

INTEGRATED PLATFORM OF BUILDING AUTOMATION



**Building
Automation
Integrator**



3. A Vision of Total Integration :

Building Automation (BA) and Ambient Intelligence (AmI)

specific domains and key elements in the future home development

Domain Specific Language (DSL)

software engineering allowing software architects to model systems based on the elements of a specific domain
to help translators and integrators

Model Driven Development

Accept a DSL

Use it as input to model the software architecture of BA and AmI

Set a translation model allowing code and configuration generation towards a specific set of functionalities, applications and devices.

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3. A Vision of Total Integration :

Everyone has to take responsibility

Government

Real Estate Investor
Architects, Planners
Construction Industry
Care Industry

Manufacturer

Integrator
Translator

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YOU
GOT
IT

integrator

and

techno-translator

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