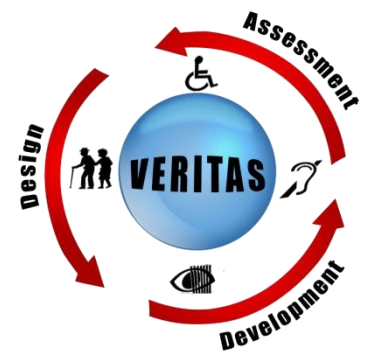




VERITAS project

FP7 247765



Project Overview



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 **Fraunhofer**
IAO

Short Profile

- Title: **Virtual and augmented Environments and Realistic user Interactions To achieve embedded Accessibility designS**
- Programme: 7. Framework
- Theme: FP7-ICT-2009.7.2
Accessible and Assistive ICT
- Type: IP (large-scale integrating project)
- Subprojects: 4 (Models – Tools – Applications – Horizontal activities)
- Duration: 48 months (01/2010 - 12/2013)
- Partnership: 32 partners from 11 European countries (Industry, Research Institutes, Universities, Associations)
- Budget: 11,7 Mio € total / 8 Mio € funding



Consortium



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Motivation and Background

- 16% of the population over 65 in the 27 EU countries
- Up to 15% of the population across the European Union have a disabilities, such as a visual, hearing, speech, cognitive, or motor impairment
- Around 20% of people over 50 experience severe physical disabilities
- Spending on pensions, health and long-term care will rise sharply over the next 20 years

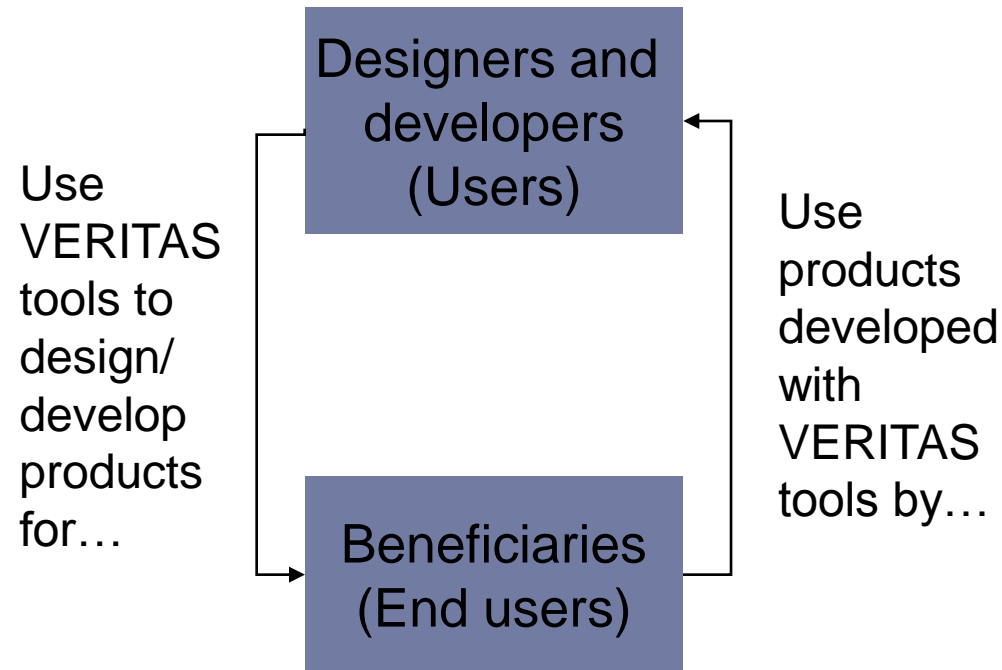


Targeted Application Domains

- Automotive
- Smart Living Spaces
- Workplace
- Infotainment
- Personal Health Care and Wellbeing



Who benefits from VERITAS?



Adressed Impairments

- Blind and low-vision impairments
- Motor impairments
- Cognitive impairments
- Hearing impairments
- Speech impairments



VERITAS Approach

- User Centered Design
- Iterative development and testing
 - **Virtual user models:** Iterative development using feedback from a multisensorial platform
 - **Simulation models:** Iterative development with feedback from real developers from the five VERITAS application sectors
 - **Iterative pilots:** Feedback from real users
- Comprehensive risk analysis and mitigation strategy.
- Involvement of key industrial partners in all stages so as to ensure the applicability of the developed algorithms and systems

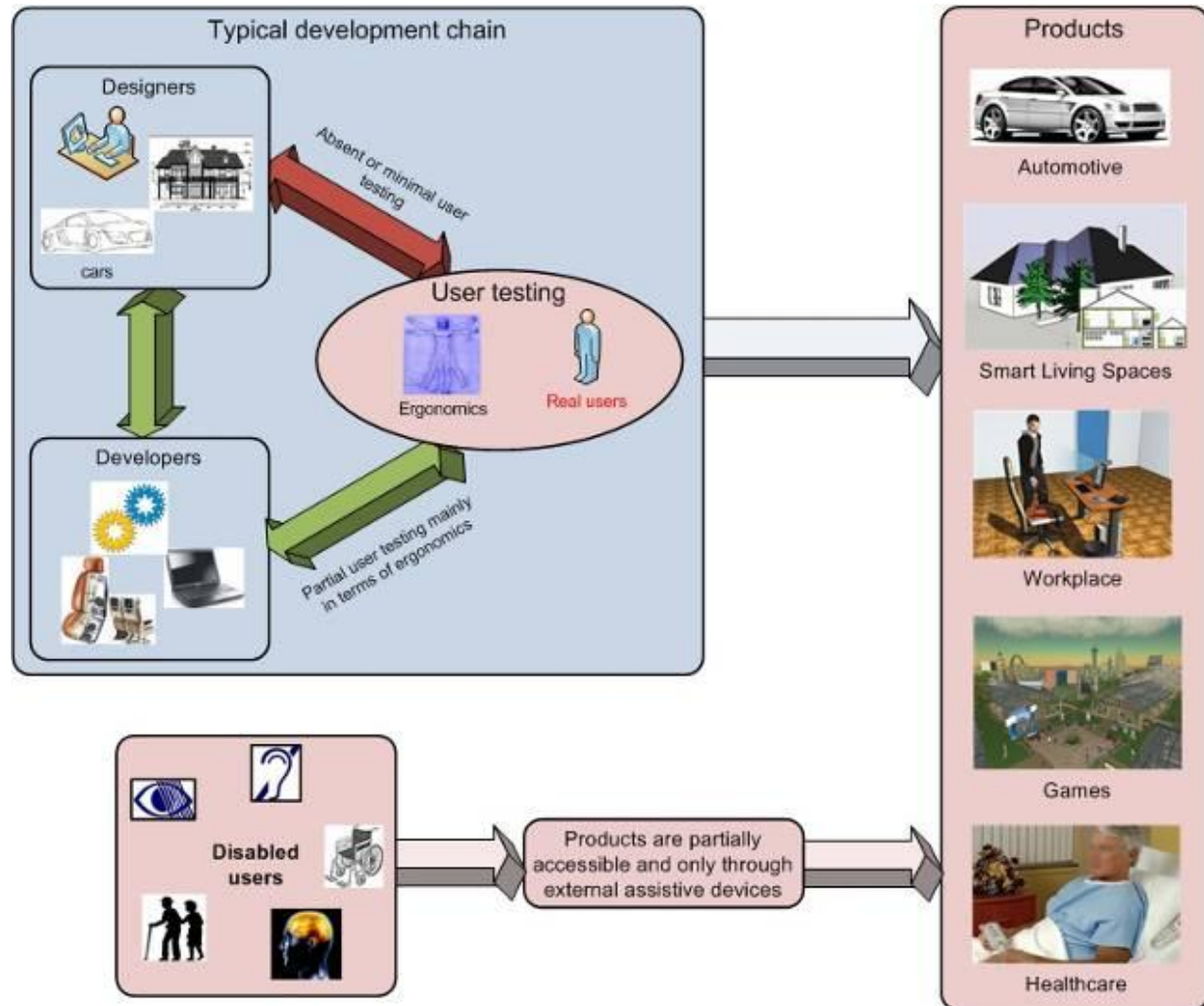


Project Outcomes

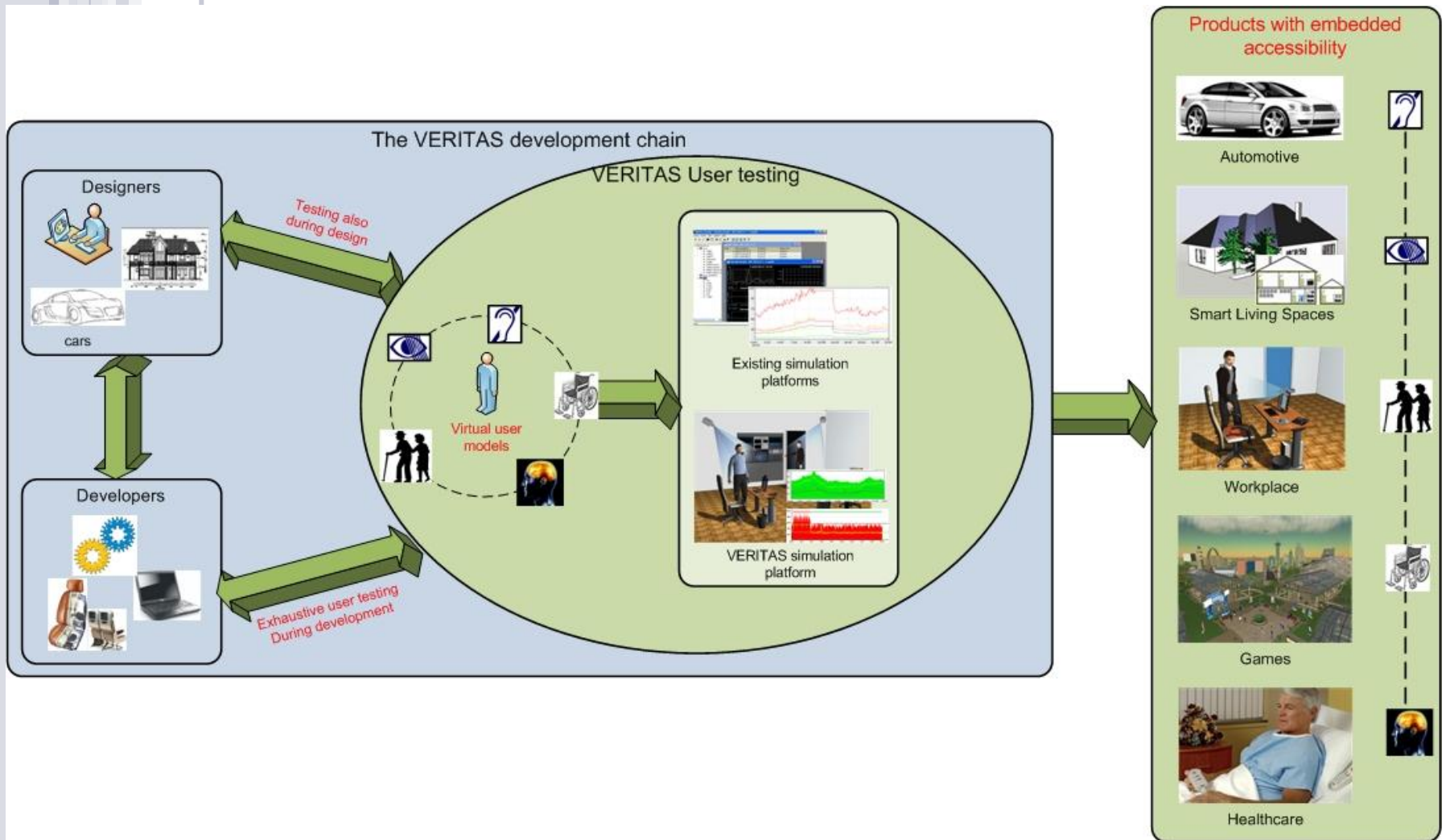
- Open library of user models (incl. VR Models)
- Open Simulation Platform (OSP) for simulation and testing in product planning and development
- Extensive list of tools for supporting accessibility testing at all stages of development for 5 domains
- Methodologies for introducing the VERITAS simulation and testing framework for evaluating ICT and non-ICT products
- Framework for immersive virtual user simulation and testing
- Measures and metrics for software accessibility through VR simulation
- Innovative concepts for ambient, multi-device, universally accessible multimodal interfaces through VR simulation



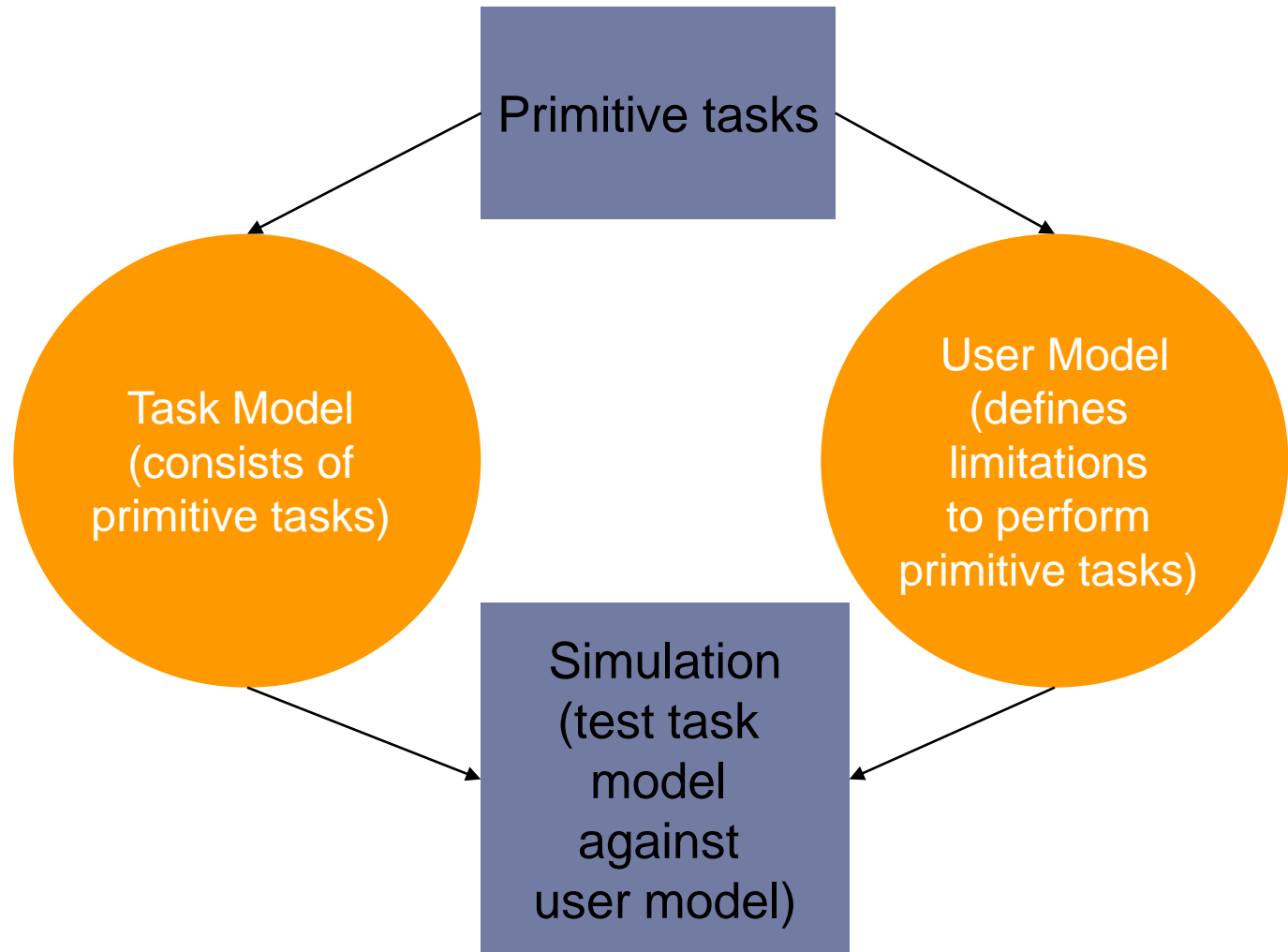
Development chain before VERITAS



Development Chain with VERITAS



Basic Simulation Principle



User and Task Models

○ User Models

● Abstract User Model

- Describes a disability

● Generic Virtual User Model

- Describes the set of users having a specific disability,
- The affected primitive tasks and
- The affected primitive tasks' parameters
 - Binary (ex. Abnormal step rhythm: Yes)
 - **Range of values** (ex. Gait cycle [1.12, 3.22] sec)

● Virtual User Model

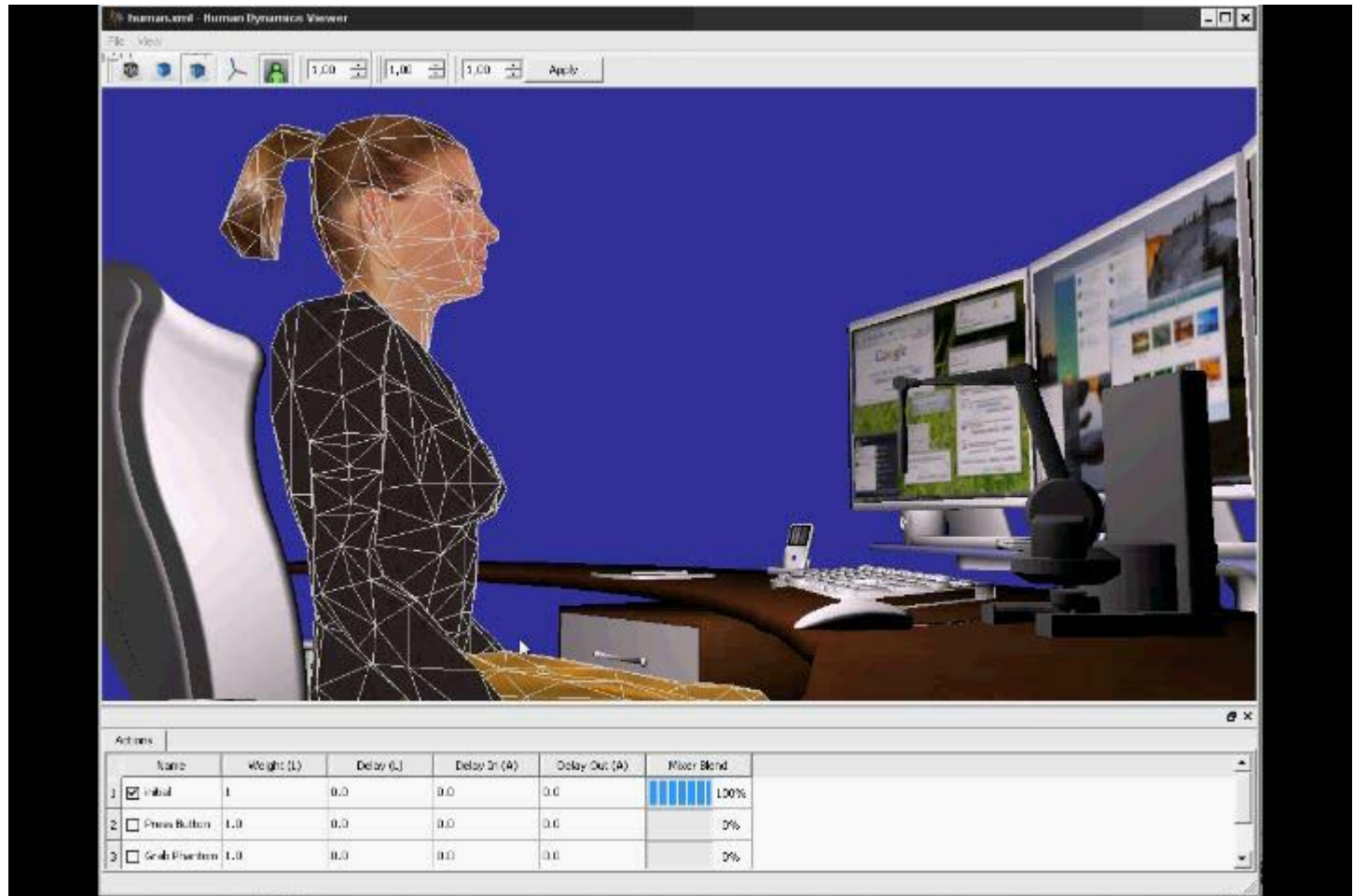
- An instance of a virtual user
- Describes user's disabilities,
- The affected primitive tasks and
- The affected primitive tasks' parameters for the specific user
 - Binary (ex. Abnormal step rhythm: Yes)
 - **Specific values** (ex. Gait cycle : 2.1 sec)

○ Task Model

- Describes how a complex task can be divided into primitive tasks that have to be executed sequentially.



Simulation Platform



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Immersive Experiences for Designers/Developers

- 3rd Person:
 - **Manikin:** Under control of OSP and application specific Simulation model
 - **User:** Observer of Manikin in VR



and

- 1st Person
 - **Manikin = User**
 - Manikin under user's direct control and minimal OSP influence
 - User's interaction filtered to simulate disability



VUMS Cluster

Design for Adaptability



GUIDE

MyUI

VERITAS

VICON



VAALID



Human Models



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VUMS Cluster Objectives

- Support Designers/Developers with tools for inclusive design by
 - Design/development frameworks
 - Adaptable interface technology
 - Human models
 - Simulation platforms
- Make these interoperable
- Support and drive standardization



VUMS Cluster Application Domains and Beneficiaries

Users

Designers
Architects
Engineers
Developers

AAL

Brown Goods

White Goods

Construction

Domotics

Games

Automotive

Workplace

Learning

...

Beneficiaries

All
Elderly
Disabled

Cognitive
Impairments

Physical
Impairments

Sensory

Motor



Where is VERITAS?

User models

Tools

Applications and Evaluation

