

Exploitable Results by Third Parties

12038 FIONA

Project details

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Name: SmartMDS Toolchain and System Composition Know-how of HSU		
Input(s):	Main feature(s)	Output(s):
	<ul style="list-style-type: none"> ▪ An open-source Eclipse-based IDE for model-driven development of software building blocks and for model-driven composition of applications. ▪ Know-how on model-driven techniques and a service oriented component-based approach for application development, system composition, establishing an ecosystem and building a model-driven toolchain to support that 	<ul style="list-style-type: none"> ▪ Composable SmartSoft Components ▪ Runnable Applications ▪ Scientific publications, documentation and videos of knowledge for software development and system composition
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ An Integrated Development Environment (IDE) for service-oriented component-based software development ▪ Technology Readiness Level (TRL) 6 ▪ Supports separation-of-roles in time and space ▪ Performs the step-change from document-driven to model-driven software engineering as enabler for a software component market and for a technology / business ecosystem via Model-Driven Software Development (MDS) ▪ Main fields of application: software intensive technical systems (cyber-physical systems, distributed embedded systems, service robotics) ▪ Documented meta-models, workflows, best practices and lessons learned 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ Standard Linux Operating System (Recommended: Ubuntu 12.04 LTS) 	
Intended user(s):	<ul style="list-style-type: none"> ▪ Component providers ▪ System integrators ▪ Application developers 	
Provider:	<ul style="list-style-type: none"> ▪ Servicerobotik Ulm / University of Applied Sciences Ulm (HSU) ▪ Available online: http://www.servicerobotik-ulm.de/ 	
Contact point:	<ul style="list-style-type: none"> ▪ Prof. Dr. Christian Schlegel – schlegel@hs-ulm.de ▪ M.Sc. Dennis Stampfer – stampfer@hs-ulm.de 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ LGPL (GNU Lesser General Public License) (low entry hurdle due to open source license) ▪ Know-how freely available via publications and documents 	

Latest update: 23.05.2016

Name: Composable Software Components of HSU		
Input(s):	Main feature(s)	Output(s):
▪	<ul style="list-style-type: none"> ▪ A repository of composable SmartSoft components for service robotics and for mobile applications ▪ A set of basic demonstrators for indoor / outdoor navigation composed out of these components for illustrative purposes 	▪
Unique Selling Proposition(s):	<p>A repository of 39 ready-to-use software components covering different functionalities which can be composed to different applications in different domains:</p> <ul style="list-style-type: none"> ▪ Bluetooth / iBeacon localization ▪ Laser-based localization ▪ GPS localization ▪ Navigation, mapping and collision avoidance ▪ Task execution: SmartTCL sequencer ▪ MORSE and Player / Stage-based simulation ▪ Speech synthesis and speech recognition ▪ Graphical user interfaces ▪ Sensor drivers like camera drivers, IMU drivers, etc. ▪ Base-drivers for robot platforms: Pioneer, Segway, Robotino 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ SmartSoft/ACE: the ACE-based reference implementation of the service-oriented component-based framework SmartSoft ▪ Recommended: the SmartMDSO toolchain for assisted system composition 	
Intended user(s):	<ul style="list-style-type: none"> ▪ System Integrators 	
Provider:	<ul style="list-style-type: none"> ▪ Servicerobotik Ulm / University of Applied Sciences Ulm ▪ Available online: http://www.servicerobotik-ulm.de/ 	
Contact point:	<ul style="list-style-type: none"> ▪ Prof. Dr. Christian Schlegel – schlegel@hs-ulm.de ▪ M.Sc. Dennis Stampfer – stampfer@hs-ulm.de 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Open Source Licenses, mostly LGPL (GNU Lesser General Public License), low entry hurdle due to open source licenses 	

Latest update: 23.05.2016

Name: Communication Objects for the FIONA Architecture		
Input(s):	Main feature(s)	Output(s):
▪	<ul style="list-style-type: none"> ▪ The FIONA-specific elements to define the architecture of FIONA applications and to build the FIONA applications with the SmartMDSD toolchain. 	▪
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ The communication objects support the specification and development of applications and services for seamless indoor and outdoor navigation assistance for people. They form a vendor-independent set of domain-specific architectural elements which ensure interoperability and composition of co-existing software components as needed for a FIONA technology / business ecosystem 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ SmartSoft/ACE: the ACE-based reference implementation of the service-oriented component-based framework SmartSoft ▪ Recommended: the SmartMDSD toolchain for assisted system composition 	
Intended user(s):	<ul style="list-style-type: none"> ▪ Component Providers ▪ System Integrators ▪ Application Developers 	
Provider:	<ul style="list-style-type: none"> ▪ Provided by the partners of the FIONA project ▪ Available online: https://sourceforge.net/p/smartsoft-ace/code/HEAD/tree/trunk/src/interfaceClasses/CommIndoorOutdoorNavigationObjects/ 	
Contact point:	Maintained by: <ul style="list-style-type: none"> ▪ Prof. Dr. Christian Schlegel – schlegel@hs-ulm.de ▪ M.Sc. Dennis Stampfer – stampfer@hs-ulm.de 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Open Source License: BSD-2-Clause 	

Latest update: 23.05.2016

Name: SmartRBBluetoothLocalization		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> ▪ Bluetooth Low Energy Beacons ▪ BTLE Beacon List ▪ Current BTLE signal strength measurement 	<ul style="list-style-type: none"> ▪ Integration of different localization and filtering algorithms ▪ Explicit integration of user orientation for improvement of estimation quality 	<ul style="list-style-type: none"> ▪ Indoor location estimate
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ Indoor localization based on BTLE signal strength measurements ▪ Stable and robust position estimates based on different filtering algorithms, integrating current & past orientation measurements. ▪ Ready-for-use within the FIONA-Architecture and SmartSoft / SmartMDSO Toolchain 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ Bluetooth LE Beacons ▪ Communication Objects for the FIONA-Architecture ▪ SmartSoft / ACE: the ACE reference implementation of the service-oriented component-based framework SmartSoft ▪ Recommended: SmartMDSO toolchain for assisted system composition 	
Intended user(s):	<ul style="list-style-type: none"> ▪ Developers ▪ Research engineers 	
Provider:	<ul style="list-style-type: none"> ▪ Robert Bosch GmbH 	
Contact point:	<ul style="list-style-type: none"> ▪ Mathias Bürger mathias.buerger@de.bosch.com 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Commercial license, negotiable 	
<i>Latest update: 23.05.2016</i>		

Name: Visual localization		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> ▪ 2D image ▪ 3D model 	<ul style="list-style-type: none"> ▪ Finds the 3D pose of the camera in 3D space from 2D image 	<ul style="list-style-type: none"> ▪ Location in space ▪ Orientation in space
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ Robust visual localization in real time based on 3D model of the environment ▪ Ready-for-use within the FIONA-Architecture and SmartSoft / SmartMDSO Toolchain 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ OpenCV2.4 ▪ libavcodec53 ▪ libavformat53 ▪ libswscale2 ▪ libdc1394-22 ▪ libxml++2.6-2 ▪ libboost-system1.46.1 ▪ libboost-python1.46.1 <p>Recommended:</p> <ul style="list-style-type: none"> ▪ Communication Objects for the FIONA-Architecture ▪ SmartSoft / ACE: the ACE reference implementation of the service-oriented component-based framework SmartSoft ▪ SmartMDSO toolchain for assisted system composition 	
Intended user(s):	<ul style="list-style-type: none"> ▪ Software developers of applications that include indoor navigation 	
Provider:	<ul style="list-style-type: none"> ▪ Comland d.o.o. 	
Contact point:	<ul style="list-style-type: none"> ▪ Mitja Pugelj, mitja.pugelj@comland.si 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Commercial license, negotiable 	

Latest update: 23.05.2016

Name: SmartSensorDataFusionESK		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> • IMU • Data from different localization systems 	<ul style="list-style-type: none"> • Multi-Sensor Data Fusion to provide a robust orientation as input for navigation • Orientation calculated through fusion of data from an Inertial Measurement Unit and different localization systems 	<ul style="list-style-type: none"> • Orientation • Improved position based on data fusion
Unique Selling Proposition(s):	<ul style="list-style-type: none"> • Unique integration of different systems (IMU, localization techniques) through Multi-Sensor Data Fusion to provide better accuracy and stability of the location output • Ready-for-use within the FIONA-Architecture and SmartSoft / SmartMDS D Toolchain 	
Integration constraint(s):	<ul style="list-style-type: none"> • Currently implemented in C/C++ <p>Recommended:</p> <ul style="list-style-type: none"> • Communication Objects for the FIONA-Architecture • SmartSoft / ACE: the ACE reference implementation of the service-oriented component-based framework SmartSoft • SmartMDS D toolchain for assisted system composition 	
Intended user(s):	Developers Research engineers	
Provider:	Fraunhofer ESK	
Contact point:	Ali Golestani ali.golestani@esk.fraunhofer.de	
Condition(s) for reuse:	Licensing	
<i>Latest update: 23.05.2016</i>		

Name: SmartMapProvider		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> ▪ User Profile ▪ Map Name ▪ Coordinates 	<ul style="list-style-type: none"> ▪ Provides requested map corresponding to a specific user profile ▪ Provides requested map which contains given coordinates ▪ Converts real coordinates to pixel coordinates, and vice versa. 	<ul style="list-style-type: none"> ▪ Grid Map ▪ Corresponding map name of given coordinates ▪ Converted coordinates for local and global coordinate system
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ SmartMapProvider will be used with SmartPathPlanning and SmartProfileProvider components. ▪ SmartMapProvider works both for single-floor and multi-floor maps attached with authentication information. ▪ SmartMapProvider performs coordinate conversion between global and local coordinate systems. ▪ Ready-for-use within the FIONA-Architecture and SmartSoft / SmartMDS Toolchain 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ Communication Objects for the FIONA-Architecture ▪ SmartSoft / ACE: the ACE reference implementation of the service-oriented component-based framework SmartSoft ▪ Recommended: SmartMDS toolchain for assisted system composition 	
Intended user(s):	<ul style="list-style-type: none"> ▪ Developers ▪ Researchers 	
Provider:	<ul style="list-style-type: none"> ▪ HAVELSAN Inc. 	
Contact point:	<ul style="list-style-type: none"> ▪ Çağlar AKMAN cakman@havelsan.com.tr ▪ Murat BAL mbal@havelsan.com.tr ▪ Berkan DEMİREL bdemirel@havelsan.com.tr 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Licensing. ▪ A free license can be provided for research purposes. 	

Latest update: 23.05.2016

Name: SmartProfileProvider		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> User Name 	<ul style="list-style-type: none"> SmartProfileProvider broadcasts the user profile information to requesting components. User profile information are stored in xml format. 	<ul style="list-style-type: none"> User profile information (floors, user health situations, landmark positions etc.)
Unique Selling Proposition(s):	<ul style="list-style-type: none"> SmartProfileProvider component provides user information to the requesters. SmartPathPlanning and SmartMapProvider needs SmartProfileProvider. Ready-for-use within the FIONA-Architecture and SmartSoft / SmartMDS Toolchain 	
Integration constraint(s):	<ul style="list-style-type: none"> Communication Objects for the FIONA-Architecture SmartSoft / ACE: the ACE reference implementation of the service-oriented component-based framework SmartSoft Recommended: SmartMDS toolchain for assisted system composition 	
Intended user(s):	<ul style="list-style-type: none"> Developers Researchers 	
Provider:	<ul style="list-style-type: none"> HAVELSAN Inc. 	
Contact point:	<ul style="list-style-type: none"> Çağlar AKMAN cakman@havelsan.com.tr Murat BAL mbal@havelsan.com.tr Berkan DEMİREL bdemirel@havelsan.com.tr 	
Condition(s) for reuse:	<ul style="list-style-type: none"> Licensing. A free license can be provided for research purposes. 	

Latest update: 23.05.2016

Name: SmartPathPlanning		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> ▪ Current location ▪ Target/Destination location ▪ Map information ▪ User profile (i.e. visually impaired) 	<ul style="list-style-type: none"> ▪ SmartPathPlanning provides complete path from start-point to destination-point ▪ Complete path is provided with a list of way points that are in the grid format ▪ Algorithms support both single-floor and multi-floor navigation. ▪ Algorithms have ability to generate different optimal paths for different user profile. 	<ul style="list-style-type: none"> ▪ Shortest and safest destination path from current location to the target location.
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ SmartPathPlanning will be used with SmartMapProvider, SmartProfileProvider, component providing location information and component providing HMI. ▪ The navigation algorithm which is developed in the SmartPathPlanning component has an ability of working under different constraints such as various building architectures (single floor, multi floor), specific user profiles (healthy person, visually impaired person, person who needs a crutch) ▪ Ready-for-use within the FIONA-Architecture and SmartSoft / SmartMDS Toolchain 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ Communication Objects for the FIONA-Architecture ▪ SmartSoft / ACE: the ACE reference implementation of the service-oriented component-based framework SmartSoft ▪ Recommended: SmartMDS toolchain for assisted system composition 	
Intended user(s):	<ul style="list-style-type: none"> ▪ Developers ▪ Researchers 	
Provider:	<ul style="list-style-type: none"> ▪ HAVELSAN Inc. 	
Contact point:	<ul style="list-style-type: none"> ▪ Çağlar AKMAN cakman@havelsan.com.tr ▪ Murat BAL mbal@havelsan.com.tr ▪ Berkan DEMİREL bdemirel@havelsan.com.tr 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Licensing. ▪ A free license can be provided for research purposes. 	

Latest update: 23.05.2016

Name: MEMS IMU		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> IMU Sensor based on legacy MEMS sensors 	<ul style="list-style-type: none"> Inertial Measurement Unit providing Azimuth – Elevation – Roll output 	<ul style="list-style-type: none"> Orientation
Unique Selling Proposition(s):	<ul style="list-style-type: none"> Small physical unit based on legacy MEMS sensors and an Atmega 328 processor providing one output line per second Ready-for-use within the FIONA-Architecture and SmartSoft / SmartMDS Toolchain 	
Integration constraint(s):	<ul style="list-style-type: none"> USB output interface, software integration component for Smartsoft exists <p>Recommended:</p> <ul style="list-style-type: none"> Communication Objects for the FIONA-Architecture SmartSoft / ACE: the ACE reference implementation of the service-oriented component-based framework SmartSoft SmartMDS toolchain for assisted system composition 	
Intended user(s):	<ul style="list-style-type: none"> Developers of robotics or navigation assistance platforms 	
Provider:	<ul style="list-style-type: none"> Masaryk university 	
Contact point:	<ul style="list-style-type: none"> Karel Slavicek – karel@ics.muni.cz 	
Condition(s) for reuse:	<ul style="list-style-type: none"> Prototype unit 	
<i>Latest update: 23.05.2016</i>		

Name: SmartSoft Visual-based Context Provider		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> ▪ BTLE Beacons Beacon. ▪ Frames got from a camera. 	<ul style="list-style-type: none"> ▪ Context-aware information for the visually impaired with location-based image detection. 	<ul style="list-style-type: none"> ▪ context information for guiding signs and information panels, through TTS.
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ Context-aware information service for the visually impaired based on location-based image detection. ▪ Ready-for-use within the FIONA-Architecture and SmartSoft / SmartMDS Toolchain 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ Requires Smartphone or Android-based HMD with built-in camera and BT 4.0 Interface. ▪ Communication Objects for the FIONA-Architecture ▪ Smartsoft with BTLE 4.0 interface and BT 4.0 interface for mobile communication. ▪ SmartSoft / ACE: the ACE reference implementation of the service-oriented component-based framework SmartSoft ▪ Recommended: SmartMDS toolchain for assisted system composition 	
Intended user(s):	Blind users for mobile app, and Building & Facility Managers for Admin Services.	
Provider:	<ul style="list-style-type: none"> ▪ SII Concatel 	
Contact point:	<ul style="list-style-type: none"> ▪ elio.saltamacchia@concatel.com 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Licensing 	

Latest update: 23.05.2016

Name: Low Power Security Controller for Mobile Devices		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> ▪ Requirements for new mobile device ▪ Lower power consumption required compared to 90 nm EEPROM devices 	<ul style="list-style-type: none"> ▪ Low power implementation in 65 nm technology especially for mobile devices (like mobile phones or navigation systems) ▪ Focus on cost and power optimized embedded flash cells ▪ Optimized hardware implementation for "Hardware Support Library" (HSL) 	<ul style="list-style-type: none"> ▪ Low power mobile device using 65 nm eFlash technology
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ Power and cost optimized solution for mobile devices ▪ High security level ▪ hardware optimized for eFlash programming library (HSL) 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ eFlash security controller is required 	
Intended user(s):	<ul style="list-style-type: none"> ▪ Mobile device developer or software developer 	
Provider:	<ul style="list-style-type: none"> ▪ Infineon Technologies AG 	
Contact point:	<ul style="list-style-type: none"> ▪ Infineon Customer Support / www.infineon.com 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Purchase hardware 	
<i>Latest update: 23.05.2016</i>		

Name: Hardware Support Library (HSL) for 65 nm eFlash		
Input(s):	Main feature(s):	Output(s):
<ul style="list-style-type: none"> Hardware chip with embedded Flash memory 	<ul style="list-style-type: none"> Library support for embedded Flash management (programming, erasing, reading) Efficient and low power usage of the embedded Flash memory 	<ul style="list-style-type: none"> Low power and high performance Flash usage
Unique Selling Proposition(s):	<ul style="list-style-type: none"> Low power and high performance usage of embedded Flash memory High security implementation Easy-to-use library / no dedicated hardware knowledge of eFlash required 	
Integration constraint(s):	<ul style="list-style-type: none"> HSL is running on a chip with the 65 nm eFlash technology HSL library is included in the project 	
Intended user(s):	<ul style="list-style-type: none"> Programmers of security controller with low power requirements 	
Provider:	<ul style="list-style-type: none"> Infineon Technologies AG 	
Contact point:	<ul style="list-style-type: none"> Infineon Customer Support / www.infineon.com 	
Condition(s) for reuse:	<ul style="list-style-type: none"> Purchase chip including HSL library 	
<i>Latest update: 23.05.2016</i>		

Name: Concepts for TPM in mobile navigation devices		
Input(s):	Main feature(s)	Output(s):
Position Information User Authentication Credential	Authentication of Users Authentication of Locations	Access Grant for Users Access to Credentials
Unique Selling Proposition(s):	TPM-Based authentication for users and locations secured by trustworthy hardware components High resilience against unauthorized readout of credentials Resistance against Password-Bruteforce-Attacks Ready-for-use within the FIONA-Architecture and SmartSoft / SmartMDSD Toolchain	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ Requires TPM-Chip present on platforms ▪ Concept work; requires specific implementation for target devices Recommended: <ul style="list-style-type: none"> ▪ Communication Objects for the FIONA-Architecture ▪ SmartSoft / ACE: the ACE reference implementation of the service-oriented component-based framework SmartSoft ▪ SmartMDSD toolchain for assisted system composition 	
Intended user(s):	Medium to high security sensitive devices	
Provider:	Infineon Technologies AG	
Contact point:	Infineon Customer Support / www.infineon.com	
Condition(s) for reuse:	Concept Licensing & Guided Implementation	
	<ul style="list-style-type: none"> ▪ <i>Latest update: 23.05.2016</i> 	