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Data sheets

Project number and name

Project details

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Name: **EMBEDDED VIDEO ANALYTICS**		
Input(s):	Main feature(s)	Output(s):

▪ Input of the analytic unit is a video stream from the camera	▪ 3D tracking of persons embedded on a low power platform available as a service
	▪ Build semantic services on top:
	  ○ Counting
	  ○ Wrong direction detection
		▪ results of the video analysis: number of persons, wrong direction alert, etc.

Unique Selling Proposition(s):	▪ Embedded artificial vision algorithms ▪ Easy to install and use ▪ Easy to integrate with other applications ▪ No server for video processing
Integration constraint(s):	▪ Low power processor to be inserted back to the camera
Intended user(s):	▪ Video-protection system integrators
Provider:	▪ Thales
Condition(s) for reuse:	▪ Commercial licence

Name: **smartEngine solution**		
Input(s):	Main feature(s)	Output(s):
Dedicated input plugins, as for example: ▪ **Industry:** web services, DPWS, modbus, KNX, profibus, QRCode reader, … ▪ **Geolocation:** GPS coordinates, RFID tag, ▪ **Automation:** Zigbee HA, Xbee, USB, IRDA, wifi, ZWave (door opening, presence detection…) ▪ **Multimedia:** camera, microphone, Kinect, UPnP, DLNA devices, LeapMotion, mouse, keyboard… ▪ **Automotive:** OBDII bus, CAN, … ▪ **Health:** HL7 (Continua) … ▪ **Security:** HTTP, TCP, UDP, frame sniffers/filters…. ▪ **Reactive to external websites:** Twitter thread, RSS, … ▪ **Direct sensor management :** accelerometer, compass, presence, gaz, radiation, …	▪ **A versatile generic engine to manage and process Internet of Things /M2M data and events.** ▪ Heterogeneous sources of data, events and services (client's ecosystem of devices) are data are collected and unified with smartEngine dedicated plugins.	Dedicated output smartengine plugins allowing unified data/event/services passed through smartEngine core to be processed, exported or filtered. Examples of output plugins: ▪ **Communication protocols:** MQTT, AMQP, XMPP, stomp, HTTP, FTP, Web services, … ▪ **Web sites and social networks:** twitter, facebook, foursquare, instagram, Google map… ▪ **databases:** mySQL, mariaDB, … ▪ **Cloud :** IBM IoT Foundation, Amazon web services, Microsoft windows Azure… ▪ **Image processing:** Face detection, image plate detection, crowd motion detection... ▪ **Multimedia sites:** deezer, soundcloud, Youtube … ▪ **Backends / IoT data:** *eObject*, Sen.se, Thingspeak…

Name: **smartEngine solution**	
Unique Selling Proposition(s):	▪ Break the protocols silos and allow your own ecosystem of devices to access to a new level of interoperability and communication. ▪ Get a unified vision of your whole ecosystem of devices, and provide a unified view of data, events and services from your devices. ▪ Pilot embedded services, connect your ecosystem to the cloud, social networks, or other business domains in few days.
Integration constraint(s):	▪ Use smartEngine core and adequate plugins to allow your ecosystem of devices to be recognized and used.
Intended user(s):	▪ System integrators, end users, customers, …
Provider:	▪ SOGETI HighTech
Condition(s) for reuse:	▪ Commercial License to be negotiated.

Name: CEREBRO REASONING PLATFORM		
Input(s):	Main feature(s)	Output(s):
▪ Events from Sensors, Humans and Systems ▪	▪ Hybrid platform that combines high-level causal and temporal reasoning with multi-modal probabilistic inference for detecting and reacting to complex and uncertain situations ▪ Domain Semantic Description defined in a micro ontology ▪ Built-in Reasoning model on context and human activities ▪ Built-in Reasoning model for monitoring actions execution ▪ Gateway to IoT environments through Ubistruct Middleware (JMS and XMPP Agents to control a variety of stationary and mobile devices ▪ Builtin Agents for RFID, Phydgets, 6LowPAN and Zigbee Devices. ▪ Platform's architecture is modular to enable the experimentation with a multitude of reasoning approaches at different levels.	▪ Inference of High Level Knowledge on Events and Contexts ▪ Decision and Automatic Triggering of Reactive Actions

Name: CEREBRO REASONING PLATFORM	
Unique Selling Proposition(s):	▪ Sensors, Actuators and Events are described in Abstract Way through an Ontology ▪ Monitoring and Decision Logic is formalized in the Discrete Event Calculus ▪ Logical Reasoning can be interleaved with Bayesian Decision Process To handle Uncertainty
Integration constraint(s):	▪ Requires an XMPP or JMS Active MQ ▪ Requires Java 1.7 ▪ Requires a Domain Ontology
Intended user(s):	▪ Research engineers in the area of IoT and Ambient Intelligence
Provider:	▪ University Paris East, LISSI Laboratory
Condition(s) for reuse:	▪ Free and Open Source for Academia and Research Organisations

Name: DPWSim (DPWS Simulator)		
Input(s):	Main feature(s)	Output(s):
▪ Device Description ▪ Graphics	▪ DPWS Protocols Simulation ▪ Graphical User Interface (GUI) ▪ Platform Independence ▪ Flexibility	▪ DPWS Devices ▪ DPWS Spaces
Unique Selling Proposition(s):	▪ The only DPWS Simulation in the market ▪ Easy to test DPWS communication	
Integration constraint(s):	▪ DPWS standard compatible	
Intended user(s):	▪ DPWS developers, designers	
Provider:	▪ Institut Mines-Telecom, Telecom SudParis	
Condition(s) for reuse:	▪ Open-source ▪ GPLv3	

Name: IoTSpark HOME/BUILDING AUTOMATION SYSTEM		
Input(s):	Main feature(s)	Output(s):

Name: IoTSpark HOME/BUILDING AUTOMATION SYSTEM		
▪ User interactions via mobile App for configuring the system and issuing commands or requesting data. ▪ Connections to the AC controller, light controller over IPv6 via the http or coap protocols using well-defined URI's.	▪ Integrated system with air conditioner controllers, florescent lighting controllers, presence sensors, gateway, and mobile app for the end-user. ▪ Can be used to control any type of standard florescent lamps. ▪ Can be used to control any type of home Air-Conditioner if the infra-red codes are provided. ▪ Appears to the Air-Conditioner Unit as a regular remote control. ▪ Supports scheduling of the AC units and lighting fixtures for maximum efficiency. ▪ Integration with presence sensors to optimize the operation of the AC units and lighting fixtures.	▪ Energy-usage reports. ▪ Commands to the Air-Conditioner Unit: ON/OFF, Set Temperature, Set Fan Speed, Set Mode (Cold, Hot, Fan Only). ▪ Appropriate voltage level for the lamp to adjust its dimming level.

Unique Selling Proposition(s):	▪ Compatible with Samsung/Google sponsored Thread Group Connected Home Products evolving standard. ▪ Gateway allows user to access the system from anywhere over the cloud. ▪ Uses the cloud for connection only. User-data is privately kept in the gateway and never exposed to third-party. ▪ The AC and lighting control nodes can be independently sold and integrated with third party applications as they offer their services via well- defined URI's. ▪ Fully integrated system with reasonable cost.
Integration constraint(s):	▪ The nodes are wirelessly connected over IEEE 802.15.4/6LowPAN. Can be ported to work over Bluetooth Low Energy or WiFi upon request.
Intended user(s):	▪ End-users: any home dwelling or office space with interest in energy saving. ▪ AC manufacturers, lighting control manufacturers or KNX/other building automation controllers' manufacturers ▪ OEM's in the home/building automation business.
Provider:	▪ Cairo University/IoTSpark (a spin-off from Cairo University for commercializing the product).
Condition(s) for reuse:	▪ Commercial licence to be negotiated.

Name: ClimaCon		
Input(s):	Main feature(s)	Output(s):
▪ Temperature ▪ Humidity ▪ Air Quality ▪ Occupancy	▪ Climate Control with Integrated Air Quality Monitoring. ▪ Comfort Enhancement (up to 30%) ▪ Energy Saving (up to 60%)	▪ Satisfaction Index ▪ Energy Saved ▪ Air Quality Index
Unique Selling Proposition(s):	▪ High return on investment ▪ Enhances Comfort (satisfaction) with integrity among users. ▪ Designed for Expandability (multiple zones)	
Integration constraint(s):	▪ Developed for Variable Air Volume (VAV) types of HVAC. ▪ Need to reconfigure or design for other types of HVAC.	
Intended user(s):	▪ HVAC Manufacturers ▪ Commercial Buildings Owners	
Provider:	▪ NMATec (wael.farag@nmatec.com)	
Condition(s) for reuse:	▪ Commercial License to be negotiated.	

Name: Mote Placement Optimization Tool (MPOT)		
Input(s):	Main feature(s)	Output(s):
▪ Mote properties and possibly number. ▪ Building Layout. ▪ Optimization criteria. ▪ Furniture layout and material. ▪ Channel models.	▪ Calculates the optimum mote position according to several criteria such as maximum connectivity, maximum coverage, minimum cost,… ▪ Uses different optimization algorithms such as simulated annealing, fuzzy logic, genetic algorithm,… ▪ Takes into consideration the building layout, the furniture layout, and the channel models.	▪ Optimum placement of the Motes that satisfy the constraints and follow the models. ▪ Results such as connectivity map, coverage percentage, power consumption,…

Name: Mote Placement Optimization Tool (MPOT)	
Unique Selling Proposition(s):	▪ Unique product not available in the market ▪ Designers usually place motes in the buildings using best practices and ad-hoc placement ▪ First product to integrate different constraints and different requirements and targets optimizing the Mote placement ▪ Will decrease the deployment price by minimizing the number of nodes needed to achieve certain coverage
Integration constraint(s):	▪ Linux platform ▪ Java virtual machine
Intended user(s):	▪ Sensor node deployment providers in buildings, such as home and office automation providers. ▪ Can be extended to other application such deploying motes in forests, factories, … ▪ Academics who would like to study the sensor deployment algorithms and build on what's provided by MPOT.
Provider:	▪ Smartec-Group, an Egyptian company
Condition(s) for reuse:	▪ Commercial licence to be negotiated; a free licence can be provided for research purposes.

Name: UPM WoO Platform		
Input(s):	Main feature(s)	Output(s):
▪ For the sensors, readings from the environment. ▪ For the fire detector, the readings from available temperature sensors. ▪ Incoming messages from a deployed wireless sensor network. ▪ Incoming messages from the Internet as web requests.	▪ Sensors provide temperature and presence services. ▪ Fire detection sensor use aggregation from the temperature sensors and use as a reference the operational specifications recommended by the European Normative EN 54-5:2000. ▪ The Gateway provides a virtual representation of a sensor service as a web service. ▪ The Devices and Services Registry stores information about available devices and services from a semantic source. ▪ The Event Manager acts as a broker to the Internet for events in the Wireless Sensor Network.	▪ Information gathered from the sensors. ▪ Events detected or generated by aggregation. ▪ Virtual representations of sensor services as REST resources. ▪ Events notification through REST callbacks.

Name: UPM WoO Platform	
Unique Selling Proposition(s):	▪ The sensors are easily exploitable as smart sensor nodes. ▪ The fire detection is usable for composing a fire detection service where compatible temperature sensors are available and already deployed, and is also interesting for exploring the possibilities of composing services in a constrained device. ▪ The Devices and Services Registry offers integration with other WoO platforms. ▪ The Gateway and the Event Manager exposes services and events as REST resources, and are exploitable on large scale areas where a wireless sensor network is required to have a virtual representation in the Internet.
Integration constraint(s):	▪ Sensor devices are SunSPOT from Oracle. ▪ Requires a FuseESB Enterprise 7.1 enterprise service bus. ▪ Requires a MySQL database for the registry. ▪ Tested on an Ubuntu 12.04 Linux operating system.
Intended user(s):	▪ Research engineers in the area of the wireless sensor networks for the Internet of Things.
Provider:	▪ Universidad Politécnica de Madrid (UPM)
Condition(s) for reuse:	▪ GPLv3

Name: Geolocation-based house interaction		
Input(s):	Main feature(s)	Output(s):
▪ Location sensor on mobile device (smartphone, tablet, etc.) ▪ User profile with location rules	▪ Location Sensor-Based and User profile-based Services on home objects ▪ Location rules and user profile edition	▪ Action request to WoO objects (lights, heating, …) through open request to URI
Unique Selling Proposition(s):	▪ Integrated to GLOO platform. ▪ Smart Object discovery (via WoO registry) ▪ Smart Object APIs (REST pattern) ▪ Mobile interface (and User Profile) ▪ Ad-hoc and “on-the-fly” interaction (heterogeneity)	

Name: Geolocation-based house interaction	
Integration constraint(s):	▪ Android app (APK) ▪ WoO objects through REST API ▪ WoO registry and WoO semantic description
Intended user(s):	▪ System integrators for domotic systems
Provider:	▪ PRODEVELOP, S.L.
Condition(s) for reuse:	▪ Commercial licence to be negotiated

Name: **Smart Video Analytics**		
Input(s):	Main feature(s)	Output(s):

▪ Input of the analytic unit is an image/video streaming of the incorporated camera;	▪ Set of services for the automatic extraction of information from images or videos
	▪ HTTP based API to obtain information
	▪ Available services:
	  ○ License Plate Recognition
	  ○ People Counting
	  ○ Queue Analysis
		▪ results of the video analysis: licence plate, number of people, the queue size, etc.

Unique Selling Proposition(s):	▪ Advanced artificial vision algorithms for image and video processing ▪ High reliability services thanks to the collaboration of several objects for image and video analysis ▪ Easy to install and use ▪ Easy to integrate with other applications (Web APIs)	
Integration constraint(s):	▪ Depending on the service required, it may be necessary to install our hardware at the facilities to be monitored ▪ To obtain information from these services it is just necessary to have Internet connection and use a Web Browser, or to develop a client, in any environment or device, capable of sending POST/GET requests to a REST API	
Intended user(s):	▪ system integrators for video-surveillance applications, application developers, end-users from the Retail Market (e.g. shop managers)	
Provider:	▪ Visual Tools	
Condition(s) for reuse:	▪ Commercial licence to be negotiated	

Name: ThingsGate		
Input(s):	Main feature(s)	Output(s):
▪ Profile and Data of Different Sensor types: ▪ Zigbee Receiver ▪ Messages with both devices and the upper service management functions ▪ WiFi-AP including micro WoO platform on embedded Linux environments ▪ Gadgets ▪ Actuators	▪ Micro instance hosting (JavaScript based Virtual Object) of multiple types of objects ▪ Generate individual IoT nodes into a virtual object, and manage their instances on a wireless Access Point ▪ Service function composition through multiple types of objects ▪ Mashup service between VOs	▪ Status Report, as well as different Controls commands on services for: ▪ Smart Gate ▪ Smart Humidifier ▪ Smart Boiler ▪ Smart Indoor ▪ Service Router
Unique Selling Proposition(s):	▪ Easy Extension for diverse service use cases and service scenarios for services. ▪ Further applications for commercial product by collaboration with network devices manufacturers dynamically. ▪ IoT gadget management and control solution on Wi-Fi AP (ThingsGate running on Low-power Wireless Access Point. (support MIPS and ARM architecture, also x86 supported)	
Integration constraint(s):	▪ Its distance coverage is limited to WiFi effective range. ▪ Need to comply with Virtual Object Profile Schema ▪ Adapting Sensors' Network Interfaces (zigbee, z-wave, etc,.) ▪ Need for Telco, and Carrier Wi-Fi Providers, Smart WiFi AP distributor	
Intended user(s):	▪ Home ▪ Office in the building	
Provider:	▪ KAIST	
Condition(s) for reuse:	▪ Commercial licence to be negotiated Under the prior consultation and confirmation	

Name: **Smart Camera Analysis**		
Input(s):	Main feature(s)	Output(s):
▪ Video streaming of the smart camera	▪ 3D tracking based services for the automatic extraction of information from videos such as: o Person tracking o People Counting o Motion analysis ▪ Integration on embedded device (ARM processor) ▪ Available through web service interface	▪ Results of the video analysis: number of people in the field of view of the camera, localization of each person, trajectory analysis of each of them, etc.
Unique Selling Proposition(s):	▪ Advanced visual tracking algorithms ▪ Easy to deploy on large scale CCTV networks (more than hundred of cameras) with no additional computation unit required ▪ Easy to integrate with other applications (Web APIs)	
Integration constraint(s):	▪ Need camera calibration (estimated on setup)	
Intended user(s):	▪ System integrators for video-surveillance applications	
Provider:	▪ CEA List	
Condition(s) for reuse:	▪ Only through Thales/CEA List research partnership	