

Exploitable Results by Third Parties

M2MGrids project

Project details

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Instructions:

ITEA is focused on innovation and its impact; thus it is crucial to disseminate the information on the reusable modules for customers and future projects. The “Exploitable Results by Third Parties” (ERTP) document intends to describe through a set of datasheets the different reusable results of each ITEA project. These results may be technologies or integrated products, sub-systems, components, (closed or open-source) software libraries, standards, algorithms, etc.

The reuse may be free to use or not, i.e. conditional, under GPL licence or only through (commercial / research) partnerships, subject to licence costs and royalties, or be negotiable.

The purpose of the ERTP is not to describe everything that has been developed in the project (there is no need to be exhaustive) but only the main results the partners would like to communicate. As such, it must be seen as a tool offered to project consortia to facilitate the reuse of their results. It is possible to include pre-existing products / achievements if, and only if, there have been significant contributions / improvements made within the project.

Please fill in a table (called data sheet, and provided below) for each component that is available for reuse (free or conditional). Copy-paste the table as many times as needed to cover the main achievements you would like to communicate. The content of the tables should be brief, concise and to the point, so use bullet points only (as generated by the pre-defined style “Bullets in tables”). Each table (i.e. each component) should be between half a page and a full page (maximum).

The name of each component should be self-explanatory as much as possible. The inputs and outputs must be detailed as in typical system architectures with the main features focusing on where there is added-value (exhaustive descriptions should be avoided). The USP (Unique Selling Propositions) should be written in view of competing solutions. Integration constraints (e.g. operating system, required platforms or frameworks, protocols used, hardware requirements, software development impact, etc.) should be written with due consideration for the impact / constraints on any developer who would like to integrate the technology.

The different table fields are detailed hereafter. Each field is clarified with an example based on a fake component: a video-surveillance oriented smart camera software module for pedestrian detection.

Inputs: it details what the component takes as inputs, like 3D models, parameters, video streams, devices, sensors, etc., i.e. all the inputs that can be used in / imported by the module to create / generate the outputs.

Example: for the smart camera module, inputs are the video stream as well as the camera parameters (EO/IR sensor, calibration matrix, etc.), time and weather conditions (to activate more robust algorithms at night or during heavy rain).

Main features: it details the main characteristics of the component, i.e. its options, its features, innovative aspects, differentiating factors, main achievements / breakthroughs.

Example: for the smart camera module, it detects up to 100 simultaneous pedestrians in real-time on an HD video stream, on the camera hardware (an octa-core Snapdragon 615 chipset), and provides tracking of each pedestrian even in crowded scenes, incl. extraction of some basic features (estimated size and gender, global colours).

Outputs: it details what the component generates, e.g. models, architectures, applications, resources, data, objects in a specific format, etc.

Example: for the smart camera module, outputs are the tracks of detected pedestrians with their associated features.

Unique Selling Proposition(s): this section should explain what makes the component unique, why the targeted audience should reuse this component instead of a competing one (esp. if there is a commercial licence for reuse: why should people pay for this component?).

Example: always for a fully integrated smart-camera that does not request any processing computer: it is thus easily exploitable for large-scale areas as a smart sensor node. State-of-the-art performances are achieved with real-time on-board processing.

Integration constraint(s): this details all the constraints that have to be taken into account for someone who intends to integrate this component, e.g. the operating system, the dependencies, hardware requirements, etc. (if the component is a framework, like the Unity 3D / game engine, then it has to be clarified that applications must be integrated within the framework, and not the opposite).

Example: requires the (on-board) QNX operating system, a camera with easy software (C++) access to the video stream and a CPU at least as powerful as the demonstrator CPU (Snapdragon 615).

Intended user(s): this explains the kinds of users targeted by the component: model designers, application developers, research engineers with specific needs, scientific community, end-users (and if so, which ones), etc.

Example: system integrators for video-surveillance applications.

Provider: this indicates who owns the component / technology / IP, i.e. who has to be contacted to get access to it. For instance, for commercial products this field should name the partner commercialising the technology. For Open Source libraries, a link to the Open Source code and to

the community behind it should be provided. If desired by the involved partners, a contact email address can also be provided.

Example: the name of the company selling the smart camera software module.

Contact point: it identifies a person (within the provider's organisation) that an interested third party should contact in order to get more details on the component itself and its condition(s) for reuse. Please provide here at least a valid email address.

Condition(s) for reuse: this details conditions under which the component can be reused; for open-source libraries, the licence should be clarified (a GPL library has other constraints than a LGPL library, etc.); for commercial licences, the type of licence should be clarified (single cost, yearly cost, free product but with paid support, etc.) as well as the differentiation between research and commercial use (e.g. is there a free licence for research purposes?).

Example: commercial licence to be negotiated; a free licence can be provided for research purposes.

Except for inputs and outputs, which can both be optional (depending on the component nature), all other fields should be filled in.

NB: please remove these instructions before submitting your data sheets to the ITEA Office.

Name: Energy Grid Adaptive Demand Supply Device Gateway		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> Adaptive demand supply household and industry devices 	<ul style="list-style-type: none"> Creates a device and application oneM2M enabled resource pool Communicates resources protocol independent way with each other Manage energy flexible devices as a gateway according to smart energy grid cloud ecosystem 	<ul style="list-style-type: none"> Energy management of adaptive demand supply household and industry devices
Unique Selling Proposition(s):	<ul style="list-style-type: none"> oneM2M and EFI protocol support Effort effective integration with specific device protocols 	
Integration constraint(s):	<ul style="list-style-type: none"> Adaptive demand supply device support 	
Intended user(s):	<ul style="list-style-type: none"> End users All kind of structures equipped with adaptive demand supply devices such as factories, universities, hotels and etc. 	
Provider:	<ul style="list-style-type: none"> KoçSistem Bilgi ve İletişim Hizmetleri A.Ş. 	
Contact point:	<ul style="list-style-type: none"> Erdem Ergen erdem.ergen@kocsistem.com.tr 	
Condition(s) for reuse:	<ul style="list-style-type: none"> Licensing 	
<i>Latest update: 28.03.2018</i>		

Name: World Wide Streams (WWS)		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> ▪ Data flows ▪ Various onboardable entities 	<ul style="list-style-type: none"> ▪ Appealing stream processing data flow programming language (XStream) ▪ Smart compilation and dynamic deployment ▪ Flexible onboarding of devices, external services and algorithms 	<ul style="list-style-type: none"> ▪ Executing stream-intensive services on cloud, edge cloud and devices
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ Easy stream-intensive service design for no-worries distributed and multi-actor cloud/edge deployment 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ No essential integration constraints: WWS can onboard any device as a set of ingress/egress data streams, using any popular message passing protocol. WWS can onboard any algorithm or legacy service code. WWS is scalable to various stream-intensive scenarios. WWS can interwork with any legacy solutions that can be registered as a data (stream) interaction. WWS can be hosted on any cloud environment, on-premises servers, or even small-footprint devices (including OneM2M). 	
Intended user(s):	<ul style="list-style-type: none"> ▪ Service creators, JavaScript programmers and domain experts (can be employees of a service company in a given domain, such as utilities and other energy domain business actors) 	
Provider:	<ul style="list-style-type: none"> ▪ Nokia 	
Contact point:	<ul style="list-style-type: none"> ▪ info@worldwidestreams.io 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Hosted as a free service for experimentation by selected partners (http://www.worldwidestreams.io/) ▪ (Planned:) Dedicated instances hosted for commercial trial partners, various pricing models (per processing/traffic units, per service, per use, etc.) ▪ (Planned:) Commercial licenses for customer-premise deployments 	

Latest update: April 2018

Name: Bittium Smart Watch Reference Design with RTOS		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> ▪ Heart rate ▪ Skin temperature ▪ Skin conductance ▪ Configuration data through BLE 	<ul style="list-style-type: none"> ▪ OHR (Optical Heart Rate) based heart beat measuring ▪ Skin temperature measuring ▪ Skin conductance measuring ▪ Accelerometer 	<ul style="list-style-type: none"> ▪ OHR data/results ▪ Skin temperature data/results ▪ Skin conductance data
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ Extensive sensor support ▪ Latest technology is utilized in sensors to enable to use latest algorithms e.g. sleep, stress and fatigue. 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ Processor: Nordic Semiconductor nRF52832 (Cortex M4 CPU) ▪ OS: FreeRTOS ▪ Flash memory: Flash memory 1 Gbit ▪ Display: <ul style="list-style-type: none"> ○ 0,7" OLED, Mono Color ○ Resolution 128 x 80 pixels 	
Intended user(s):	<ul style="list-style-type: none"> ▪ Bittium wearable platform for health monitoring features the Cortex M4-series CPU with Bluetooth Smart radio. It is designed for low to midend wearable devices such as health trackers. The wearable platform enables the customization of unique, purpose built products with optimized BOM, development cost and time-to market. ▪ The wearable platform opens up new opportunities for enterprise, healthcare and wellness domains to develop algorithms and test new healthcare specific applications and services such as remote patient monitoring or professional driving applications. 	
Provider:	<ul style="list-style-type: none"> ▪ Bittium 	
Contact point:	<ul style="list-style-type: none"> ▪ Bittium ▪ Ritaharjuntie 1, FI-90590 Oulu, Finland ▪ Tel. +358 40 344 2000 ▪ www.bittium.com 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Licensing 	
<i>Latest update: < April 6th, 2018></i>		

Exploitable Results by Third Parties

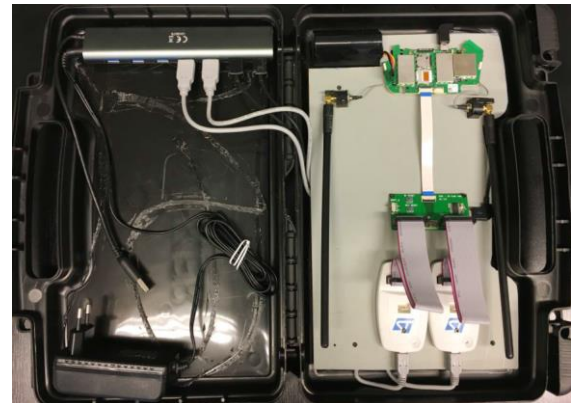
Project number and name

Name: Bittium Medical Analysis Cloud		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> EEG/ECG/EMG Biosignals (EDF/EDF+) 	<ul style="list-style-type: none"> Bittium-secured data-storage Real-time annotations of biosignals Biosignal reviewing remotely anytime anywhere Automatic Real-time analysis 	<ul style="list-style-type: none"> Raw biosignals in EDF+ format Real-time biosignal data Pretreated data analysis Annotations
Unique Selling Proposition(s):	<ul style="list-style-type: none"> All data flow is fully AES-crypted from end-to-end All access to data is logged and require authentication Dedicated servers are operated by Bittium Easily integrate 3rd party analysis 	
Integration constraint(s):	<ul style="list-style-type: none"> SafeMove VPN connection Cloud provides REST interface which can be used to access Cloud 	
Intended user(s):	<ul style="list-style-type: none"> Medical devices/platforms which needs data analyzing and storage services 	
Provider:	<ul style="list-style-type: none"> Bittium 	
Contact point:	<ul style="list-style-type: none"> Bittium Ritaharjuntie 1, FI-90590 Oulu, Finland Tel. +358 40 344 2000 www.bittium.com 	
Condition(s) for reuse:	<ul style="list-style-type: none"> Licensing 	
<i>Latest update: <April 6th, 2018></i>		

Name: Eteration Complex Event Processor		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> Real-time big data from various devices/sensors 	<ul style="list-style-type: none"> Data stream processor with complex event processing capabilities Tools and DSL for Event Streams and Execution Plans 	<ul style="list-style-type: none"> Management of the real-time events within big data according to the execution plans
Unique Selling Proposition(s):	<ul style="list-style-type: none"> IoT Cep Engine that is capable of running in embedded gateways and high scale cloud environments. Scalable m2m event processing and tools 	
Integration constraint(s):	<ul style="list-style-type: none"> No essential integration constraints 	
Intended user(s):	<ul style="list-style-type: none"> Any environment/platform that manages big data 	
Provider:	<ul style="list-style-type: none"> Eteration 	
Contact point:	<ul style="list-style-type: none"> Eteration <p>www.eteration.com Tel: +90 (212) 328 08 25 info@eteration.com</p>	
Condition(s) for reuse:	<ul style="list-style-type: none"> Licensing 	
<i>Latest update: <April 16th, 2018></i>		

Name: Tracker T-IDE+ Integrated Development Environment		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> ▪ GNSS ▪ Microphone ▪ Cellular networks from NB-IoT to full 4G ▪ LoRa ▪ 433 MHz RF ▪ Bluetooth ▪ External I/O connector for external devices as Camera ▪ Solar power ▪ Compass ▪ 3D moving sensor / accelerometer ▪ Magnetic switch 	<ul style="list-style-type: none"> ▪ Ready development environment ▪ Drivers ▪ Backend support ▪ Fast implementation, start programming within 10 minutes. All in solution ▪ Low power consumption, high set features for prototyping and designing devices ▪ The software can be implemented in simulated environment and tested in HW ▪ Waterproof 3D reference design available ▪ Enough performance to reroute video stream ▪ Versatile power control and measurement methods to maximize battery life and giving detailed information about power consumption. 	<ul style="list-style-type: none"> ▪ Ready device for different application areas ▪ Ready application development environment ▪ Ready backend to manage devices, store history and transfer real time data ▪ Communications to different radio networks ▪ Speaker ▪ Vibra ▪ Led lights
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ Ready low power development platform to rapidly create IoT device / router / platform with end to end connectivity. ▪ Ready drivers and reference applications ▪ Ready server backend if needed ▪ Ready waterproof reference mechanical design and antennas ▪ Ready battery for long time operation. Can be used with primary or rechargeable battery. 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ Processor: STM 32 F446, 180MHz (Cortex M4 CPU) ▪ OS: NuttX ▪ Flash memory: Flash memory 512Mb in processor + 128Mb external 	
Intended user(s):	<ul style="list-style-type: none"> ▪ The platform enables the customization of unique, purpose built products with optimized BOM, development cost and time-to market. ▪ The platform opens up new opportunities for companies to develop new products independent operations applications and services such as monitoring, tracking or control assets or environment. The 	

Name: Tracker T-IDE+ Integrated Development Environment	
	device can be also gateway for sensors.
Provider:	<ul style="list-style-type: none"> ▪ Tracker
Contact point:	<ul style="list-style-type: none"> ▪ Tracker ▪ Kauppiaantie 30, 90460 OULUNSALO ▪ Tel. +358 8 521 9000 ▪ hannu.lohi@tracker.fi ▪ www.tracker.fi
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Licensing ▪ Negotiable



Name: IMEC Air Quality Monitoring Platform		
Input(s):	Main feature(s)	Output(s):
<ul style="list-style-type: none"> ▪ Temperature ▪ Humidity ▪ CO₂ density ▪ NO₂ density ▪ Ambient light ▪ Particle ▪ VOC (volatile organic compounds) 	<ul style="list-style-type: none"> ▪ Large deployment of 50 nodes, and each with multiple sensors and BLE radio ▪ Network setup with sensor node, gate way, and cloud ▪ Real-time monitoring for the indoor and outdoor air quality information, to be used for smart building and smart city applications 	<ul style="list-style-type: none"> ▪ Real-time monitoring/accessing of the sensing data ▪ Data storage in the cloud
Unique Selling Proposition(s):	<ul style="list-style-type: none"> ▪ Low power air quality monitoring platform ▪ Network infrastructure ▪ Long history of data recording ready for data mining 	
Integration constraint(s):	<ul style="list-style-type: none"> ▪ In-house developed low power NO₂ sensor ▪ In-house developed BLE radio, but can be easily replaced with commercial Zigbee/BLE radio 	
Intended user(s):	<ul style="list-style-type: none"> ▪ Smart building operators ▪ Smart city operators ▪ Hotspot operators (airport/train station/stadium) 	
Provider:	<ul style="list-style-type: none"> ▪ Imec-NL 	
Contact point:	<ul style="list-style-type: none"> ▪ Imec-NL ▪ High tech campus 31, 5656AE, Eindhoven, the Netherlands ▪ Yan.zhang@imec-nl.nl ▪ https://www.imec-int.com/en/connect-with-us/imec-the-netherlands 	
Condition(s) for reuse:	<ul style="list-style-type: none"> ▪ Licensing ▪ Negotiable 	
<i>Latest update: <April 18th, 2018></i>		

Exploitable Results by Third Parties

Project number and name

Name: <INSERT COMPONENT NAME HERE>		
Input(s):	Main feature(s)	Output(s):
▪ ▪	▪ ▪	▪ ▪
Unique Selling Proposition(s):	▪ ▪	
Integration constraint(s):	▪ ▪	
Intended user(s):	▪	
Provider:	▪	
Contact point:	▪	
Condition(s) for reuse:	▪ ▪	
<i>Latest update: <INSERT LATEST UPDATE DATE HERE></i>		

Name: <INSERT COMPONENT NAME HERE>		
Input(s):	Main feature(s)	Output(s):
▪ ▪	▪ ▪	▪ ▪
Unique Selling Proposition(s):	▪ ▪	
Integration constraint(s):	▪ ▪	
Intended user(s):	▪	
Provider:	▪	
Contact point:	▪	
Condition(s) for reuse:	▪ ▪	
<i>Latest update: <INSERT LATEST UPDATE DATE HERE></i>		