



CROSS-**CPP**

ECOSYSTEM FOR SERVICES BASED
ON INTEGRATED CROSS-SECTORIAL
DATA STREAMS FROM MULTIPLE
CYBER-PHYSICAL PRODUCTS AND
OPEN DATA SOURCES

NEWSLETTER, ISSUE #1



ECOSYSTEM FOR SERVICES BASED ON INTEGRATED CROSS-SECTORIAL DATA STREAMS FROM MULTIPLE CYBER-PHYSICAL PRODUCTS AND OPEN DATA SOURCES

First year of the project

The project officially started in December 2017, the first project face-to-face meeting took place in the EC Luxembourg premises at the end of February, 2018. We discussed the project overall concept and vision and decided on the steps to speed up the collection of requirements and the specification of envisioned cross-sectorial services.

Project ideas are motivated by the fact that modern mass products generate a large spectrum of data streams from diverse industrial sectors (automotive, smart buildings etc.). The resulting amount of data is enormous and there is no unified way to access and to analyse the data. The project aims at providing an innovative IT environment making accessible the data streams coming from the mentioned mass products. It will also encourage the development of new cross-sectorial services, as well as enhancement of diverse existing services, such as energy optimisation or hyper-local weather forecast. A special attention

will be paid to the commercial confidentiality, privacy, IPR, and ethical aspects — owners need to fully control which data they want to provide to which service providers.

The project delivered expected results in the first year – the Industrial Requirements Analysis, the Plan for the Exploitation and Dissemination Results, Interim Activity Reports, as well as dissemination materials.

We have also defined the Cross-CPP Solution Concept. The CPP Ecosystem Architecture was outlined starting from an initial draft of the CPP Ecosystem Workflow, which defines the information flow between key stakeholders and Cross-CPP system modules (see the next page). The overall Cross-CPP concept clearly indicates the enormous business potentials of the Cross-CPP approach. A big chance to new business models opens up, where initial solutions will be validated and monitored in the scope of the project, before scaling up for a large spectrum of new products for millions of users.

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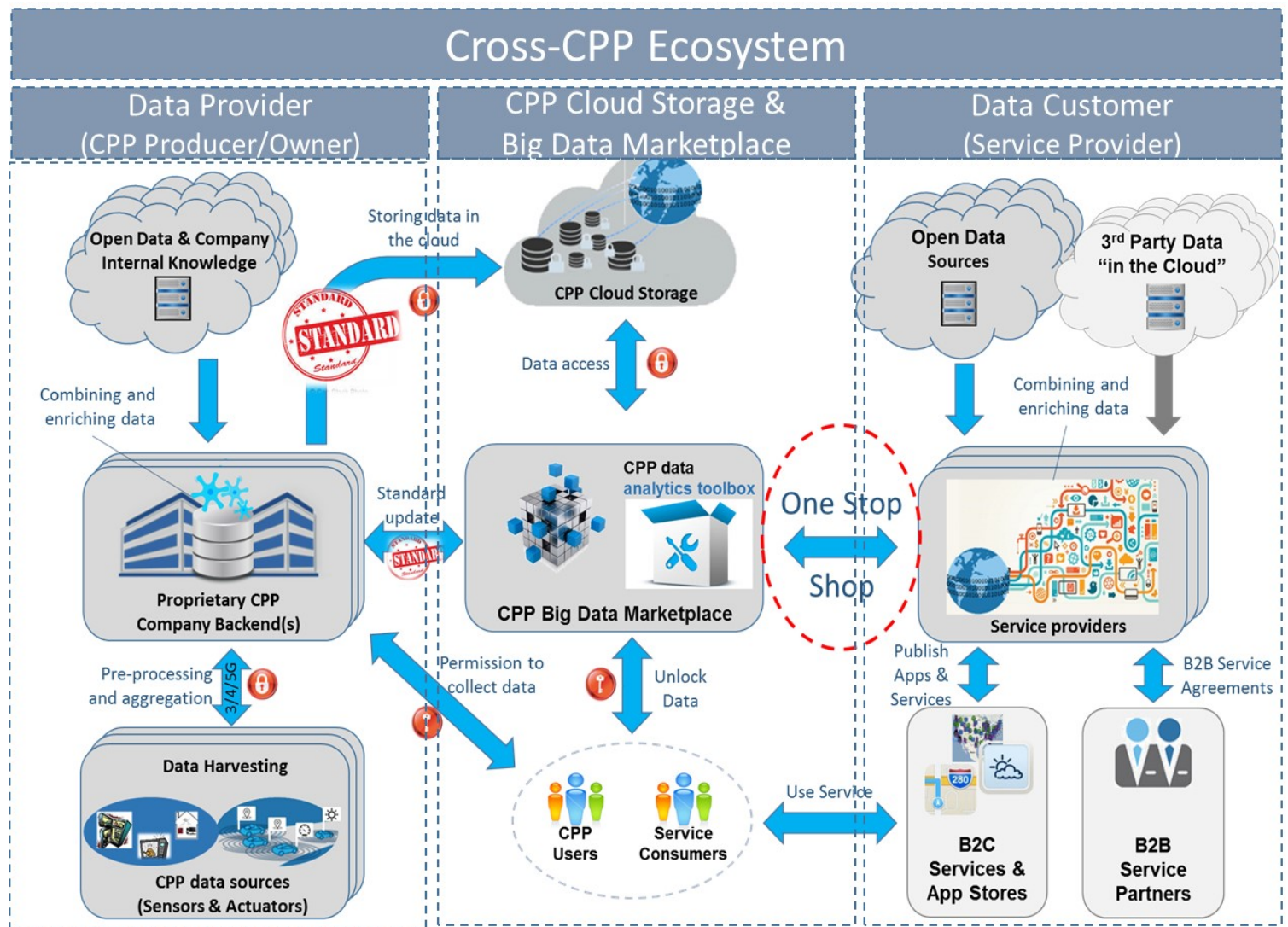
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The Cross-CPP Vision

Creating access to sensor data from various industrial sectors to enable new dimension of innovative business ideas.





Cross-CPP Concept

The above schema describes generalized Cross-CPP ecosystem workflow. It builds on three pillars:

1. **Left pillar: Data Providers (CPP Manufacturers)**
Comprising data harvesting and making CPP data from various industrial sectors available, transferring brand-specific data streams into the common CPP data model
2. **Middle pillar: Cross-CPP Cloud Storage & Big Data Marketplace (MP)**
Comprising a cloud-based concept for CPP data storage, enabling controlled access to CPP data from various sources, offering support to service providers in the form of an easy access and detection of needed data, as well as of flexible cross-data stream analysis tools.
3. **Right pillar: Data Customer/Service Provider**
Cross-sectorial industries or manufacturers of CPP using CPP data from various products to create new value out of that data by improving services or establishment of diverse new cross-sectorial services.

Beside the specification and implementation of the Cross-CPP ecosystem, the project will develop and provide a methodology concept that shall serve different stakeholders of the Cross CPP value chain as basic guidelines for participating in the overall Cross-CPP workflow.

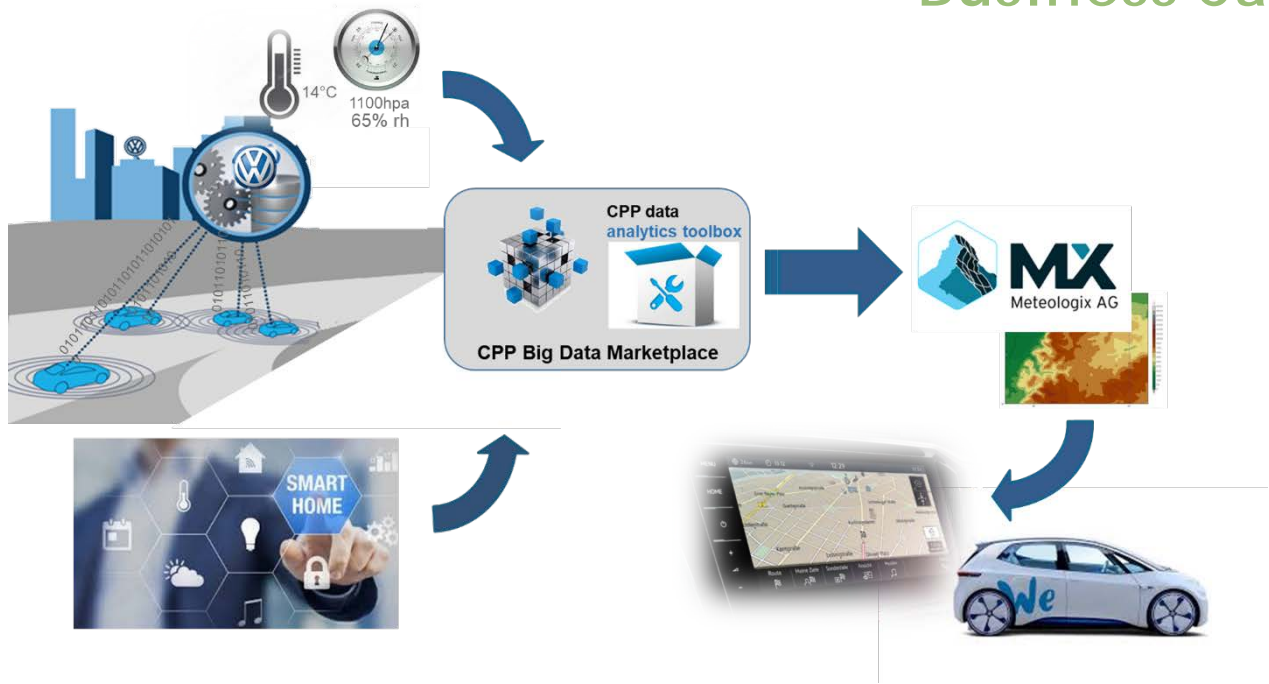
In this context, one of the key objectives of the Cross-CPP Methodology is to attract and win new eco-system users/partners by provision of tailored support material for the key ecosystem stakeholders to empower them to easily:

- implement specified and developed procedures and tools
- understand offered functions and tools

Therefore, the Methodology will address organisational, administrative and contractual measures concerning the interaction of the various stakeholders with the Cross-CPP Ecosystem. Taking the overall Cross-CPP workflow with its three main pillars as a baseline, the key stakeholders can be mapped to the workflow as representatives of key roles: CPP manufacturer, CPP owner, service provider, CPP cloud storage provider, or Marketplace operator.



Business Case



Volkswagen AG fulfils two different roles in the Cross-CPP project. On the one side, VW represents a partner who is active as a Data Providers (CPP Manufacturer), and, on the other hand, as a Data Customer (Service Provider). In this context VW is providing the technical infrastructure for gathering and transferring brand specific vehicle data streams into the brand independent format (Cross-CPP data model), and in the role of a data customer VW is using CPP data from various products (vehicles and building) to improve existing services and/or establish diverse new cross-sectorial services.

One of the key interests of VW is to overcome current proprietary brand specific concepts, which are just offering product extension services for their own vehicle customers, resulting in high service costs, since just a few services have to finance the cost for the whole ecosystem value chain. Beside this goal of achieving a win-win situation for all partners along the ecosystem value chain, VW sees also further big potentials by offering vehicle data content via an open marketplace concept to the outside world. This will also open for VW the opportunity to make use of manifold expertise of external service provider, enabling VW to offer their customers a bunch of new innovative product extensions services.

Within the scope of Cross-CPP, VW has already some own service scenario ideas, which will firstly be possible by combining data gathered from different data sources (e.g. data from buildings and vehicles) and/or the use of external expertise and data (e.g. from weather experts). One of these envisaged service scenarios is based on a cooperation with Meteorologix, who will use weather data coming from vehicles and buildings to improve their weather models, enabling them e.g. to build a new class of very precise local weather forecast information. This forecast information will then be offered as a service to VW, who will build by means of this B2B service own weather warning services (aqua planning, slippery road warning, etc.) for their vehicle customers. A further idea is to use such high-precision and local weather forecast information to build a next generation navigation service, enabling routing based on real time and forecasted weather information, not only taking into account the traffic situation.





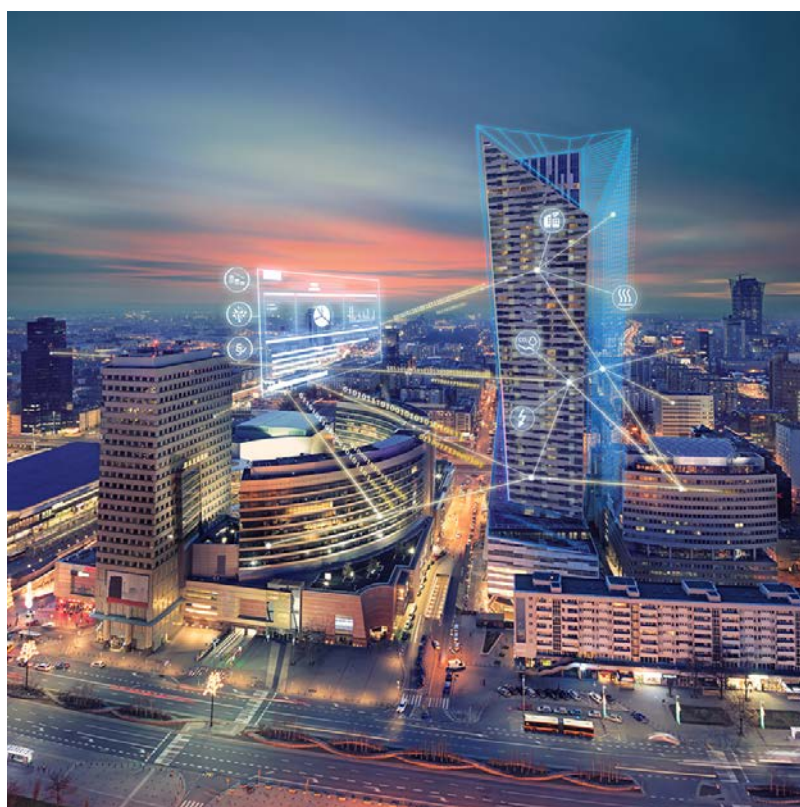
Siemens is a global powerhouse in electrical engineering and electronics. The strategic "Vision 2020" presented three new areas of where Siemens is heading: electrification, automation and digitisation. This strategy reacts to the quickly changing market conditions and develops long-term megatrends in society.

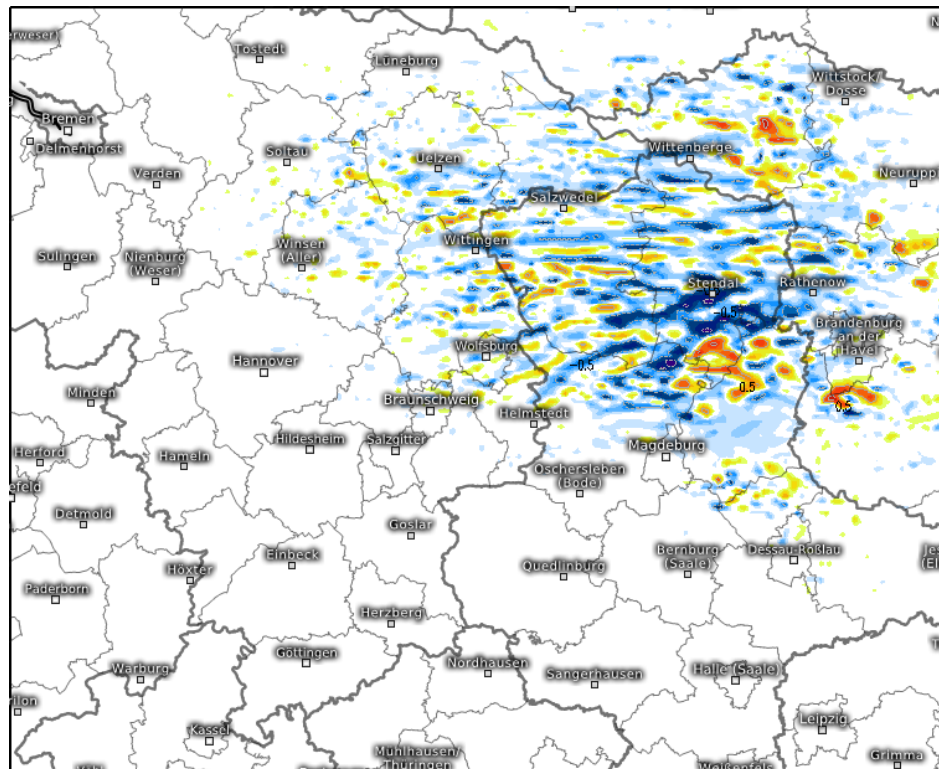
Today Siemens is able to offer integrated building solution in fire and security areas, power management, lighting and automation control. Siemens is also able to analyse big data coming from buildings and based on that optimize its performance but what is missing is data exchange with broader ecosystem.

Cross-CPP should help us to communicate with other partners and exchange data vice versa. Their data will help buildings to operate better and buildings data will help others to improve their business models. Furthermore, new joint services will come up to the attention.

Cross-CPP may also support and help to drive our business towards the Digital Building, for instance indoor positioning system with its combination with vehicles is one of the main interests of Siemens.

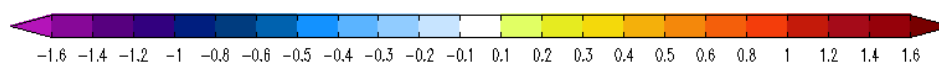
New challenges will be increasingly complex energy landscape, stability and quality of energy supply, interaction between building and grid / vehicles / weather stations / traffics modules / other buildings / e-cars charges. Building as energy generator, storage system and flexible consumer.





Temperature diff. SFC-2m (K)

Valid: Fri, 09 Mar 2018, 13z



SwissHD1x1 | run: Fri, 09 Mar 2018, 11z

(c) Kachelmann GmbH

Quality, reliability and forecast horizon of today's weather prediction depend very much on the accuracy of the observational data its calculations are based on. Thus, a fine-meshed network of weather stations is crucial as this "ground truth" reflects the underlying topography more accurately, which in turn influences the weather prediction.

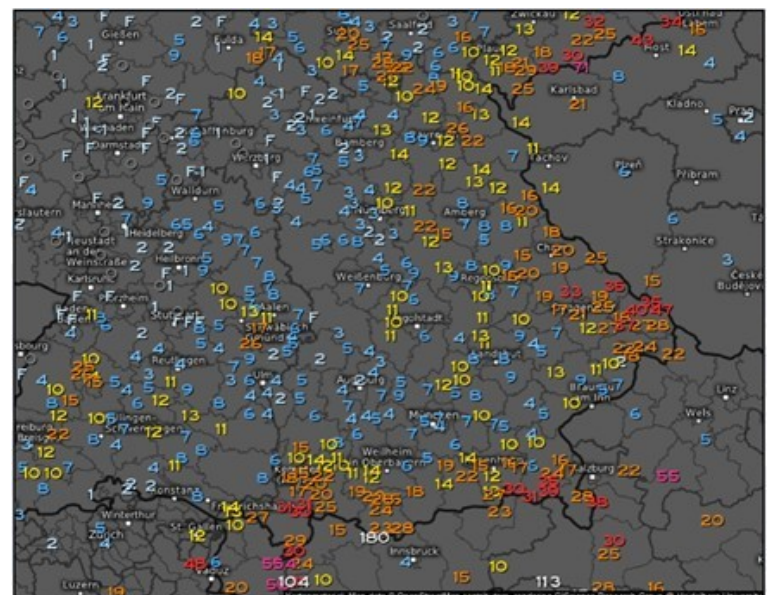
However, in Europe's meteorological observational networks, distances between two stations are often greater than 20 km. In contrast, most modern weather forecast models have a higher resolution, lead by the Meteorologix' SwissHD weather model, which has a horizontal resolution of up to 1x1 km.

Our vision for CrossCPP is to overcome the gap between observational networks and weather models in horizontal resolution, and hence, significantly improve the weather forecast quality in the future.

The H2020 project 'Automat' demonstrated that meteorological data from car sensors can make a huge

difference (see figure) as it can help feeding a weather forecast model with vital "ground truth" data.

With Cross CPP, it's time to take the next step and explore even more new data sources, that might become available to the public soon as a result of the development of the Internet of Things.





Cross-CPP dissemination

The Cross-CPP key ideas and the initial concept have been presented in several relevant events:

- Big Data Value meet-up in Sofia (May 2018)
- Wesser Kurier (German regional press article, July 2018)
- Automotive Northwest article (July 2018)
- International Engineering Fair in Brno (October 2018)
- European Big Data Value Forum in Vienna (Nov. 2018)

Next steps

We entered the second year of the project. We have gone through multiple achievements during the first year, but in the coming months there will be a number of important milestones like the Public Innovation Concept and First Prototype of CPP Infrastructure and Data Marketplace.

During the coming year we will also be facing one of the most critical tasks of the project: to start defining the business scenarios analysis (cost modelling, pricing models, etc.) for operating a B2B data Marketplace and to involve relevant European stakeholders that would benefit from the project results and extend the pool of commercial services built around the project results.



More information in <https://cross-cpp.eu/>

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