



Gap Workshop

TOPAs Overview

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Sustainable Places, 27th June 2018

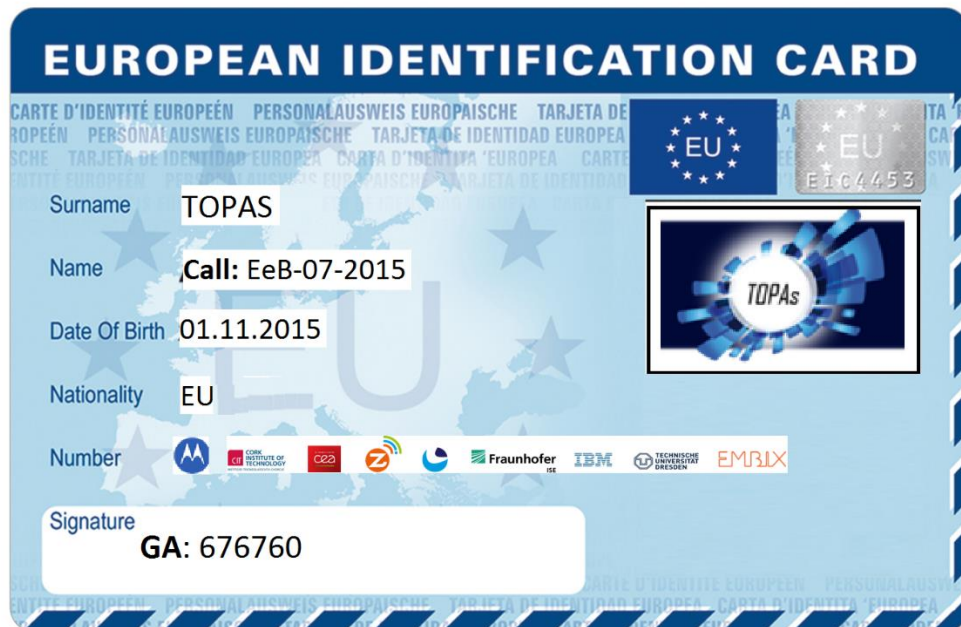


Fraunhofer
ISE





Project ID Card



- Coordinator: Motorola Solutions Israel
- 2 LE: Motorola Solutions, IBM (IRL)
- 3 SME: EMBIX, Energy Solution, Azimut Monitoring
- 2 Universities: TUD, CIT
- 2 RTO: FHISE, CEA



<https://www.topas-eeb.eu>



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Project Objectives

- **GAP Reduction**

Target a reduction in the gap between predicted energy use and actual energy use to 10%

- **Energy Savings**

Additional energy savings in the region of 15% – 20%

- **Open Platform**

Develop an open platform for continuous energy performance auditing (in and across existing buildings)

- **Decision Support Tools**

Provide decision support tools for building and facilities managers, owners and ESCOs to more effectively manage their site, providing visibility on how energy related decisions impact cost, occupant comfort and health as well as general management process

- **Continuous Auditing**

Demonstrate the benefits of continuous auditing process under real operating conditions and scenarios in private and public commercial building blocks.

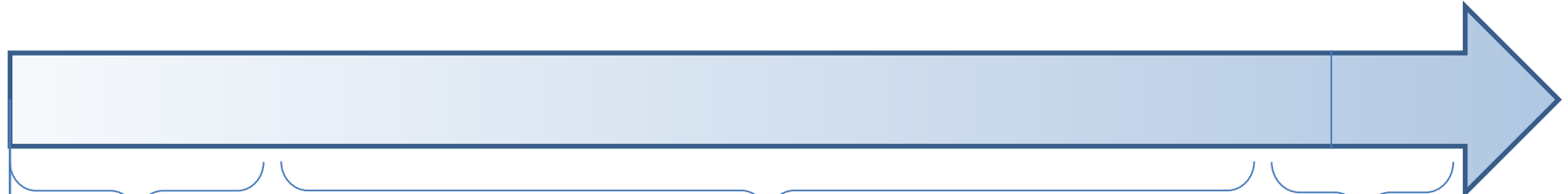




Timeline

Nov 1015

Nov 2018



Baseline
evaluation
& analysis

Tools Development
& iterative integration

Final
evaluation
on demo sites



IBM CAMPUS
DUBLIN, IRELAND



CIT CAMPUS
CORK, IRELAND



GALEO BUILDING
PARIS, FRANCE

Project start

Project end



TOPAs Approach

TOPAs is a platform of tools and services that allows the coordinated management of blocks of buildings. It continuously performs energy audit based on:

- **SENSE:** Device/System connection, data is abstracted from the environment
- **LEARN:** Big data analytics leveraging IoT technologies to transform data into actionable insights
- **ACT:** Transform analysis to actions
- **OPERATE:** Better utilize assets and manage blocks of buildings, create human value

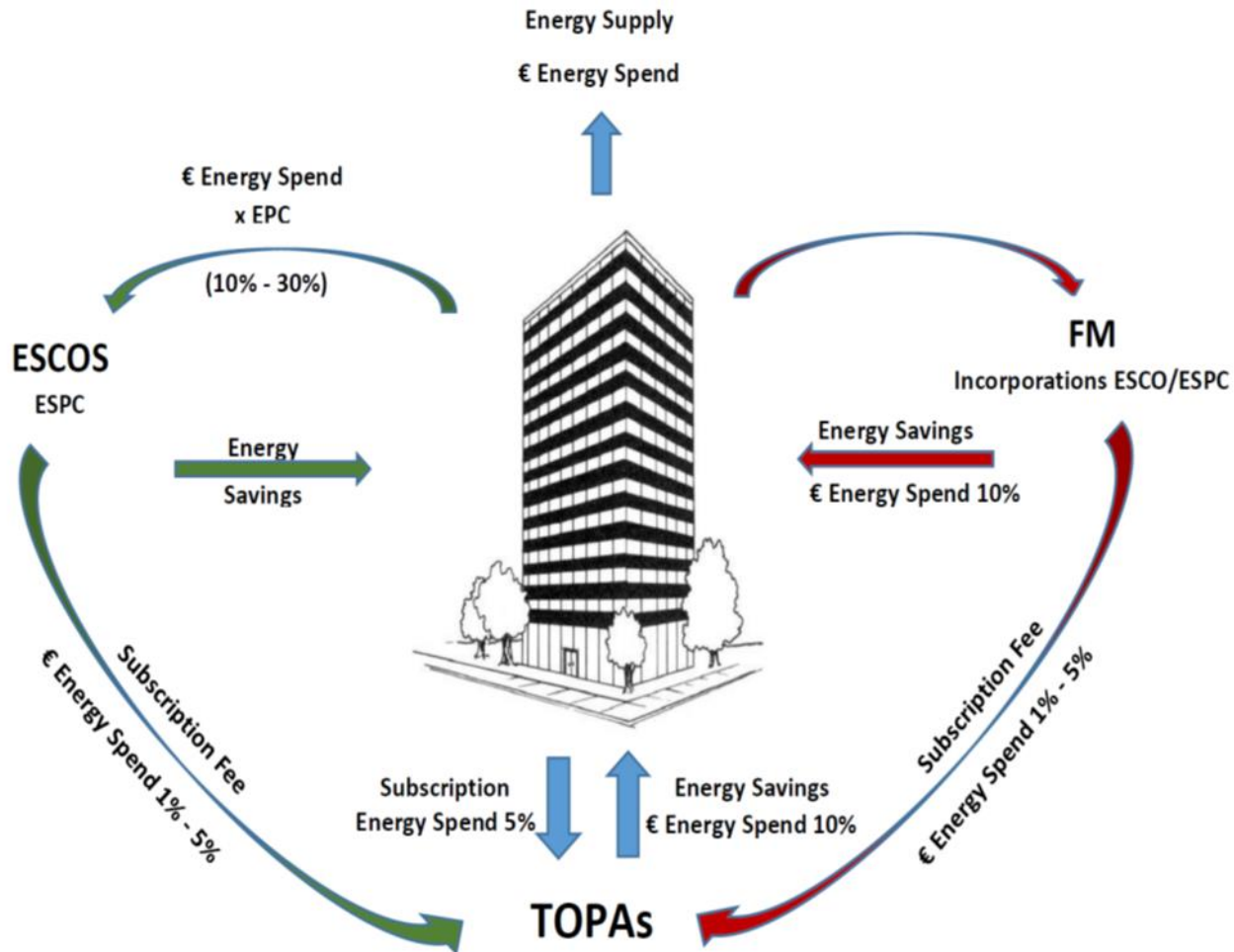


TOPAs Cognitive Loop





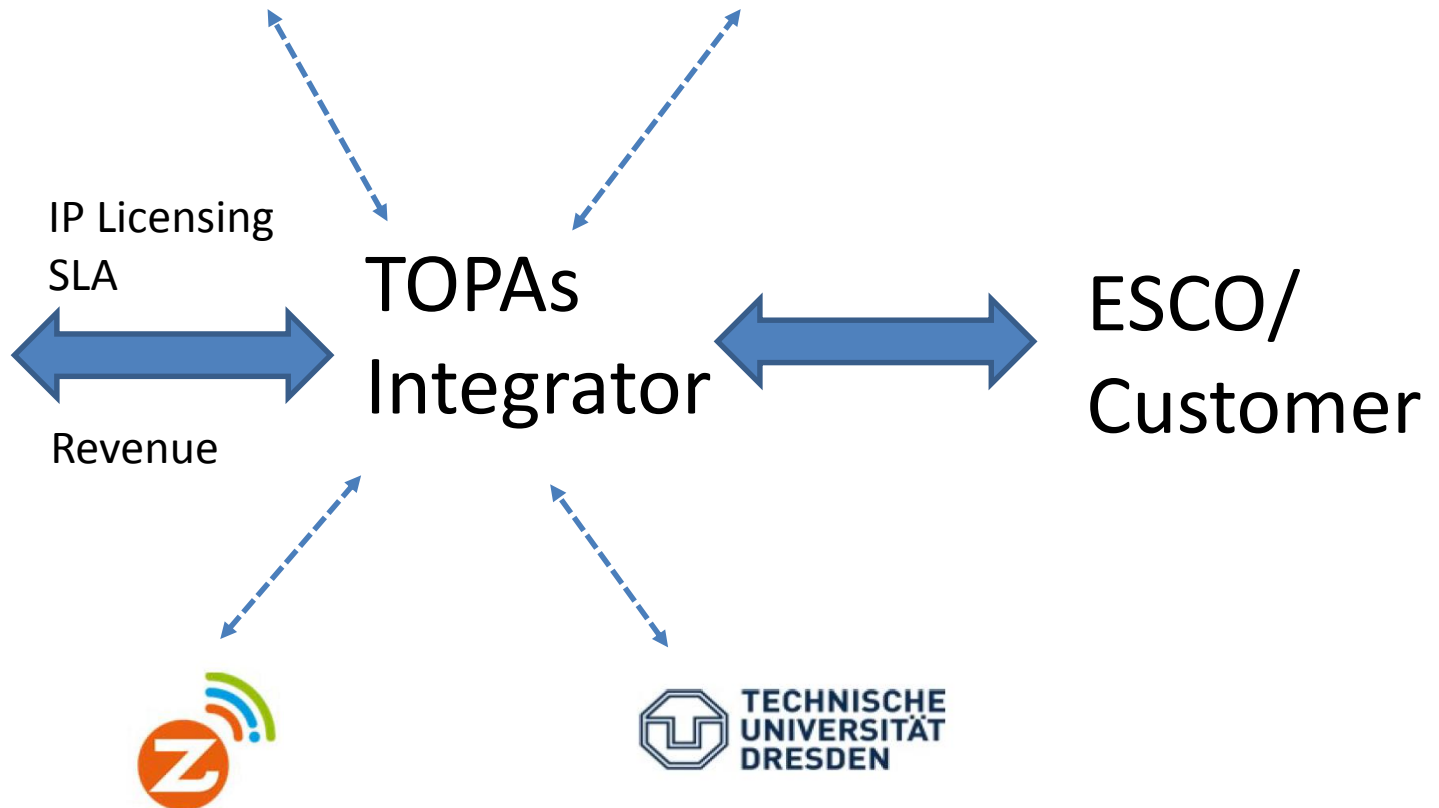
Delivery Model - ESCO





Delivery Model

TOPAs
Core





Upscaling – Buildings to Blocks of Buildings



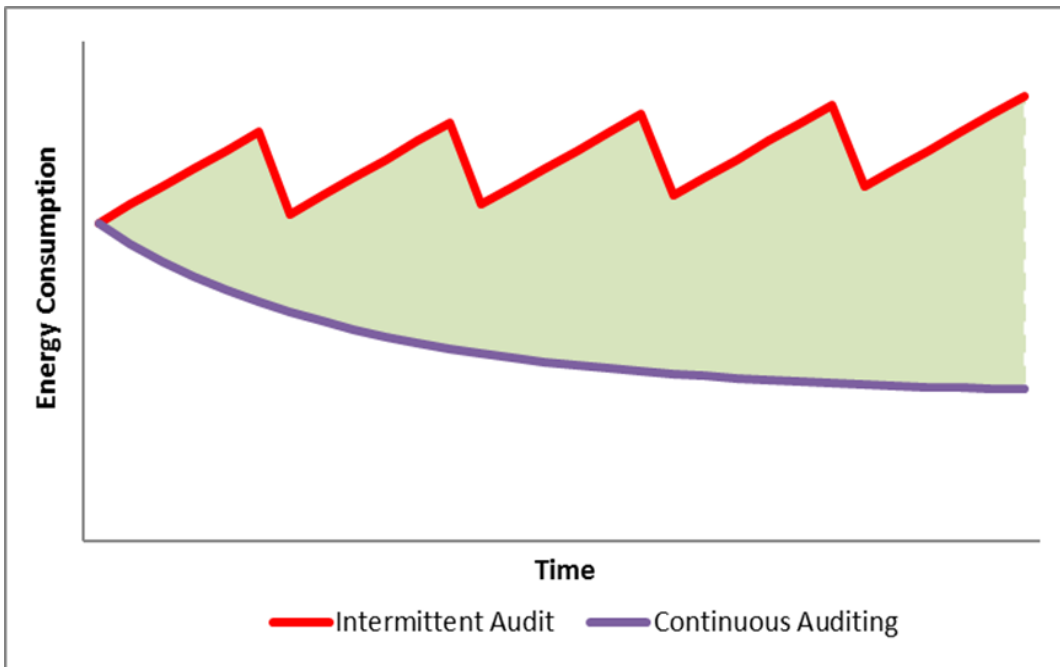


Upscaling – Buildings to Blocks of Buildings





Gap reduction

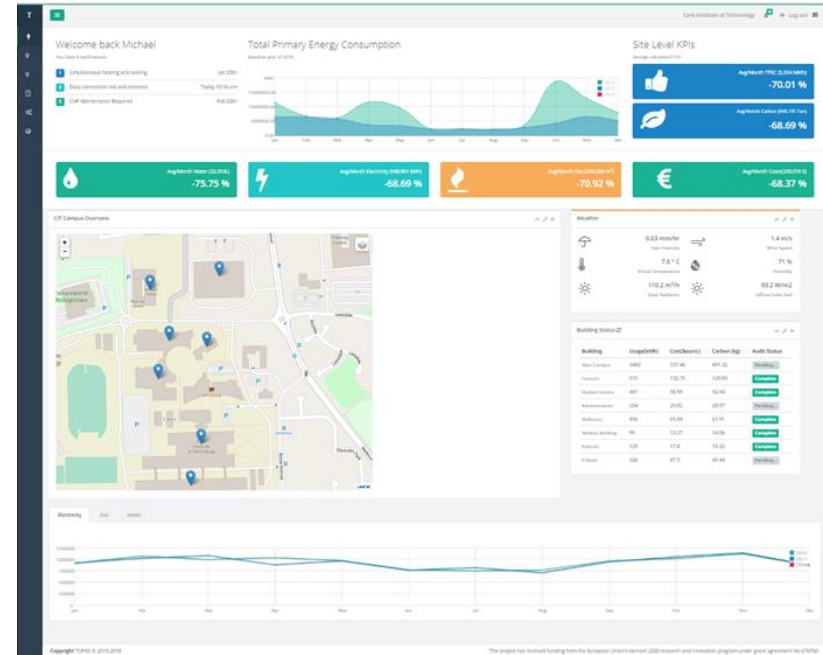


- Continuous auditing for efficient operation
- FDD
- Energy and occupancy prediction modelling
- Optimised control – DMPC
- Decision support for remedies to faults



Role of the Citizen

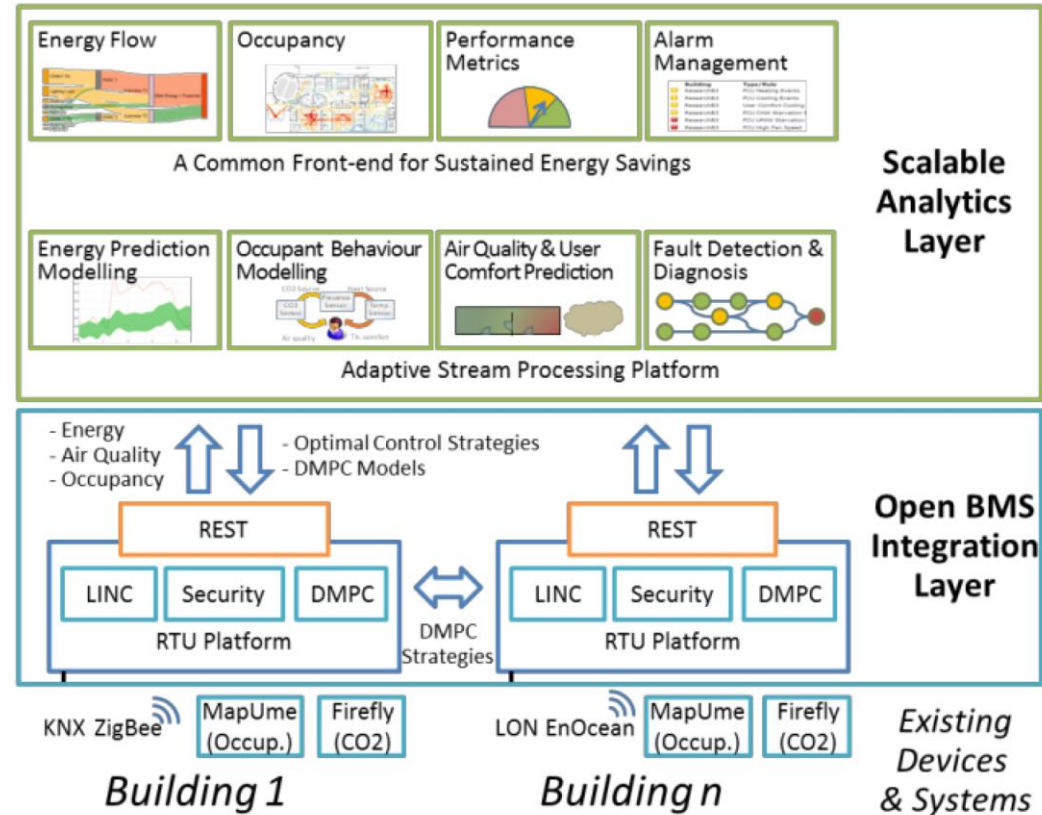
- Focused on large buildings and blocks of buildings
- Improved transparency for Facilities Management team
- Reports and alerts to motivate behaviour
- Staff awareness and behavioural change





Data Management

- Open BMS integration layer manages data abstraction and **quality checks**
- Analytics layer interprets data
- Provides actionable information to the end user





Status of Innovation - TOPAs TRL

- Core - Starting TRL 2-6; Now 6/7
- Add-Ons - Starting TRL 2-6; Now 5/7
- TRL 7 - system prototype demonstration in operational environment

Component	Partner	TRL @ start	TRL @ end
Core Components			
RTU	MSIL	6	7
Linc	CEA/BagEra	6	7
oBMS	IBM	6	7
HMI	CIT	2	6
NIM	TUD	5	7
Add-On			
FDD	FHISE	6	7
Air Quality Monitoring	Azimut	3	7
System Reconfiguration Tool	TUD	5/6	7
Energy Prediction Models	FHISE	6	7
Occupancy Models	IBM	5	7
Model Predictive Control	CIT	2	6
CSE	CEA	3	5
WiSuite	CIT	6	7
Auteras	TUD	5/6	7



Thank you