Dear Sir/Madam,

As we approach the end of the second year of the TOPAs (Tools for Continuous Building Performance Auditing) project, we are pleased to update you on all the exciting developments that have happened since our last newsletter was published.

The TOPAs system is coming together, with the full system prototype now deployed and operational in all three test-sites.

Our main accomplishments include, among others:

- **The TOPAs system is fully deployed in all 3 test sites**.

| The GALEO building
Paris, France | IBM campus
Dublin, Ireland | CIT campus
Cork, Ireland |

- **The TOPAs project movie** was developed in order to communicate the overall objective, innovation and ambition of the project.
  To watch the movie, press here
- **A Successful Review by the European Commission**. In July 2017, the project successfully passed our First Formal Review in which the Consortium presented our progress towards the project objectives during the first 18 months of the project. We are proud to report the project has met all of its objectives and received a 'green light' to continue without any modifications.
- We are well on our way to meet the **4th Project Milestone – Second Integration Cycle and Full System Development**.
- **Results from System Prototype**, a public deliverable, was published at the end of October 2017. It includes a description of the results of the TOPAs prototype in all three test sites, based on the defined use cases and the validation objectives.
  The deliverable is available here.
  The Full System Integration and Validation Report will be published in May 2018.
- We are planning to hold a **'Business Angels meeting'** in the coming months to discuss exploitation potential and the TOPAs offering.

In addition to the substantial progress made in the development of the project, the TOPAs team has also published several scientific papers which were presented at the following events:

- **TOPAs at the 20th IFAC World Congress, July 2017, Toulouse France**
  The IFAC - International Federation of Automatic Control, World Congress is the forum of excellence for the exploration of the frontiers in control science and technology. This Congress is attended by a worldwide audience of scientists and engineers from academia and industry. It offers the most up-to-date and

complete view of control and automation techniques, with the widest coverage of application fields. It is held once every three years.

CEA together with CIT presented a paper - "Application of Distributed Model Predictive Approaches to Temperature and CO2 Concentration in Buildings". The paper is available here.

- **Early Design of Building Automation, June 2017**
  The design of building automation is not seamless but divided into different fragment (HVAC, lighting, sunblinds etc.). Improvement is possible if the first design step includes all fragments to enforce an integrated design workflow. A knowledge based tool supports a nearly automatic design workflow with fast results.
  The paper was published by TUD in the German journal "at - Automatisierungstechnik", on June 12, 2017, and is available only in German

- **TOPAs at Leti Innovation Days Event, June 2017, Grenoble, France**
  Leti, a technology research institute at CEA tech, is a global leader in miniaturization technologies enabling smart, energy-efficient and secure solutions for industry. This year, TOPAs has been presented in the 'Environmental Transition' section of the "Leti Innovation Days" event.
  The poster presented is available here

- **TOPAs at Sustainable Places 2017 Conference, June 2017, Middlesbrough, UK**
  In this conference, CEA presented the current status of TOPAs, leading to fruitful discussions in the session "Innovative data models for the built environment", and initial results on advanced controllers developed in TOPAs: "Thermal Control in Buildings using Model Predictive Control under Air Quality Constraints", in the session "Energy consumer engagement models & load profiling"
  The paper and presentation are available here

- **Towards a Comprehensive Life Cycle Approach of Building Automation System, June 2017, Edinburgh, UK**
  The communication between different partners to handle the different tasks during the life cycle of buildings is far from being perfect. Fragmented engineering, lack of data consistency, insufficient system documentation or sensitivity for data sharing are only a few of many problems in this field that have not been efficiently handled through researches as well as in practice. This paper focuses on a deeper analysis of these problems mainly in the planning and engineering phases (they are the basis for all other phases) from both technical and economical point of view. An approach to handle these problems is presented and thoroughly discussed.
  The paper, written and presented by TUD, is available here

- **Development Tools for Rule-Based Coordination Programming in LINC, June 2017, Neuchatel, Switzerland**
  This paper details a set of tools that have been built to develop applications in LINC, a coordination environment rooted in Linda tuple spaces and Gamma chemical machine approaches. These tools allow developers to design better coordination rules, to monitor and update a running distributed application. The tools proposed here include design and debugging tools.
  The paper, written and presented by CEA, is available here

- **TOPAs at Dresden's 15th Researchers Night, June 2017, in Dresden, Germany**

  The 15th Dresden's Researcher Night, held on June 16th, 2017 delighted more than 38,000 visitors. Over 680 events were organized by the university, colleges, private institutes and companies of Dresden.

  TOPAs' TUD team has shown the TOPAs demonstrators and discussed with approximately 600 visitors about the future usage of TOPAs' technologies in the Faculty of Computer Science of the Technical University of Dresden. Many people were very interested in learning about energy consumption prediction, failure detection and management, as well as system reconfiguration (in case of failures or additional user's requirements).

  For the full news item on the TOPAs website, press here.

- **Common Indicators for Continuous Performance Auditing**

  TOPAs provides a holistic and complete system for the management of energy with associated performance indicators to allow continuous checking and corrective action.

  Through the availability of performance indicators related to all aspects of energy use, TOPAs allows energy performance to be monitored continuously, with building level and site level performance indicators, reported on a continuous basis. The TOPAs set of tools assist in identifying potential energy conservation measures and in setting an energy saving action plan.

  The report is available here

- **System Prototype Integration and Validation Report**

  The TOPAs System Prototype Integration and Validation Execution Report presents the achieved system integration and validation status up-to April 2017 (M18, Prototype Phase) and establishes the basis for the TOPAs full-system integration and validation due April 2018 (M30, Full System). This document presents the overall integration achievements and details the tests performed at three pilot sites in Ireland and France.

  The report is available here

In the coming months we are planning a third (and final) Stakeholders forum meeting, in which we will present project results and share insights we learned. If you would like to participate, please let us know at: contact@topas-eeb.eu

Also, in an effort to open up new channels of communication with the professional community, to enable open discussions and idea sharing, we are currently in the process of building a TOPAs professional group on LinkedIn, we invite you to join the group at www.linkedin.com/groups/13542364.

As always, the project website is a good place to catch up on our latest News & Events, scientific papers and public deliverables. .

Sincerely yours,
TOPAs Consortium.
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