At the core of the Engage KTN is the definition of various thematic challenges: new ideas suggested by the research community, not already included within the scope of an existing SESAR project. They are developed along with the ATM concepts roadmap and complementarily with some of the network's PhDs and theses.

Thematic challenge 2

Data-driven trajectory prediction

Workshop final programme

Edition 2.3, 5 November 2018

Workshop date:	**6 November 2018**
Host:	Universitat Politècnica de Catalunya (UPC) - Castelldefels Campus
Address:	C. Esteve Terradas, 7. 08860 Castelldefels C3 Building

Abstract

Accurate and reliable trajectory prediction (TP) is a fundamental requirement to support trajectory-based operations. Lack of advance information and the mismatch between planned and flown trajectories caused by operational uncertainties from airports, ATC interventions, and 'hidden' flight plan data (e.g., cost indexes, take-off weights) are important shortcomings of the present state of the art. New TP approaches, merging and analysing different sources of flight-relevant information, are expected to increase TP robustness and support a seamless transition between tools supporting ATFCM across the planning phases. The exploitation of historical data by means of machine learning, statistical signal processing and causal models could boost TP performance and enhance the TBO paradigm. Specific research domains include machine-learning techniques, the aggregation of probabilistic predictions, and the development of tools for the identification of flow-management 'hotspots'. These could be integrated into network and trajectory planning tools, leading to enhanced TP.

Programme

09:30-10:00 Registration and welcome coffee

10:00-10:15 Welcome and overview from the Engage KTN
(Dirk Schaefer, EUROCONTROL)

10:15-10:35 Foreword
(Franck Ballerini, Francis Decroly, EUROCONTROL Network Manager)

10:35-11:35 Research challenges in trajectory prediction

- **10:35-10:50 Trajectory prediction to assess ATM performance: Challenges and limitations identified in SESAR ER project APACHE**
  (Xavier Prats, UPC)
- **10:50-11:05 Challenges identified in the SESAR ER project DART**
  (Pablo Costas and Javier Lopez-Leonés, Boeing R&T Europe)
- **11:05-11:20 The challenge of inferring stakeholder behaviour from data**
  (Rodrigo Marcos, Nommon)
- **11:20-11:35 Challenges identified in the SESAR ER project PARTAKE**
  (Miquel Àngel Piera, UAB; Juan José Ramos, ASLOGIC)

11:35-11:55 Coffee break

- **11:55-12:15 Operational challenges in trajectory prediction**
  (Sebastian Wangnick, EUROCONTROL MUAC)

12:15-12:55 Promising research avenues

- **12:15-12:35 Signal processing**
  (Jordi Vilà-Valls, CTTC and Ramon Dalmau, UPC)
- **12:35-12:55 Contextual modelling**
  (Christian Verdonk, University of Cranfield)

12:55-14:00 Lunch break

14:00-16:30 Facilitated brainstorming

- **14:00-14:10 Briefing**
- **14:10-15:45 Breakout session (including coffee break)**
- **15:45-16:30 Plenary debriefing and Pareto voting**

16:30-16:45 Wrap-up and closeout

Request a booking

To request a place:

- please visit: engagektn.com
- go to the “Contacts” page and select “Thematic challenge workshop registration”, clearly stating which workshop you wish to attend

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