

# Data-Enhanced Trajectory Based Operations Workshop



12:30 *Welcome and Lunch*

13:30 Introduction to the WS

13:45 Keynote speaker – Goran Stojkovic (Boeing Digital Airline and Analytics)

## ***Session 1.- Trajectory Data Management***

14:15 Trajectory Data storage (CRIDA)

14:55 Big data integration and management for the ATM domain – (UPRC)

15:15 *Coffee-break & networking*

## ***Session 2.- Data-Driven Mobility Predictions & Analytics***

15:35 Hybrid data-driven trajectory prediction analytics (BR&T-E)

15:55 Data-driven aircraft trajectory prediction (UPRC)

16:15 Complex Events Recognition (CRIDA)

16:35 Visual Analytics of Trajectory Data (NSCR/FRHF)

16:55 *Coffee-break & networking*

## ***Session 3.- Applications of Machine Learning to TBO***

17:15 Trajectory based analytics: A Maritime Situation Awareness Perspective – (NARI/CMRE)

17:35 Trajectory-centered agent-based modeling of ATM (UPRC)

17:55 Python Big Data Analytics with Dask (Juan Luis Cano)

18:15 Workshop conclusions and wrap-up

# DART Project



- **DART:** Data-driven Aircraft Trajectory prediction Research
  - SESAR 2020 Exploratory Research
  - *Topic ER-02-2015 - Data Science in ATM*
  - June 2016-June 2018 (currently ongoing)
- **Objective:** Address the suitability of applying big data techniques for predicting multiple aircraft trajectories based on **data-driven models** and accounting for **ATM network complexity** effects
- **Focus on:**
  - Single Trajectory Prediction (WP2)
  - Multiple (Collaborative) Trajectory Prediction (WP3)
- **Extended Objective:** Iterative multi-criteria optimization process, considering different stakeholders interests
- **Link to DatAcron H2020 project** (discrete events forecasting for moving entities)



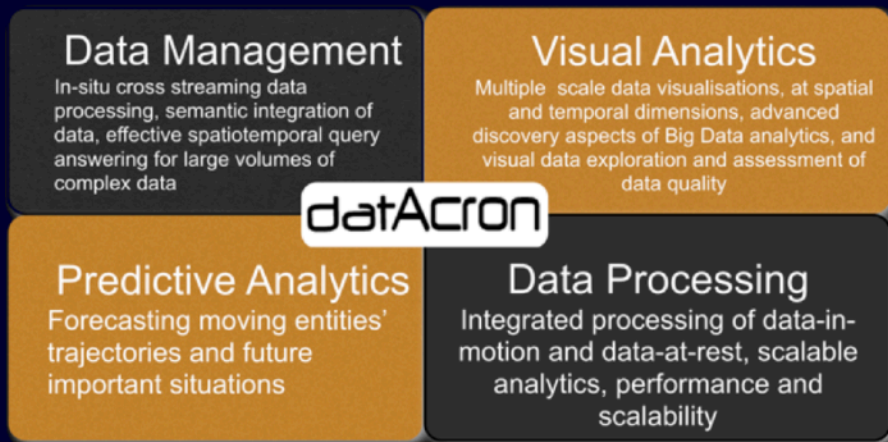
<http://dart-research.eu/>

# datACron Project



datACron project is funded by the European Union's Horizon 2020 Programme under grant agreement No. 687591.

datACron is a research and innovation collaborative project targeting at introducing novel methods to detect threats and abnormal activity of very large numbers of moving entities in large geographic areas.



<http://datacron-project.eu/>



datACron brings together partners from academia and industry to develop novel methods for threat and abnormal activity detection in very large fleets of moving entities in sea and air, together with user and data-provision partners from the maritime and air traffic domains, focusing on real-life, industrial and user-defined operation challenges (e.g. surveillance, forecasting of trajectories, characterization, etc.).



## Keynote Speaker: Goran Stojkovic

Montreal Polytechnic School graduate with Ph.D. in Operations Research (OR). More than thirty years of academic and industry experience in planning, organizing and directing the analysis, design and development of innovative solutions and services. Participating in many OR and Aviation conferences, publishing several articles in leading OR journals and authoring book chapters in prestigious OR books. In Boeing/Jeppesen since 2002 working in different roles at New York, Montreal and Denver offices. Currently based in Denver, part of the Digital Airline and Analytics Global Managed Services team. His current focus is on increasing the Boeing Global Services (BGS) productivity and market share through innovation, integration, and consistent use of analytics and optimization methods and technologies across all BGS product portfolios.