

Full-scale Pre-Tactical Route Prediction

Machine Learning to increase pre-tactical demand forecast accuracy

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Abstract— The objective of this paper is to present an artificial intelligence-based methodology to predict the Flight plans that will be received during the pre-tactical phase of the Air Traffic Flow and Capacity Management (ATFCM) process. For this purpose, input features equivalent to those of EUROCONTROL's PREDICT solution are fed to a Multinomial Logistic Regression algorithm over pre-clustered air routes in order to determine which route cluster is the most likely to be filed by an airspace user within each OD-pair. Results show that this procedure is capable of outperforming the current PREDICT solution in almost 40% of the 5,699 OD pairs considered and reducing current solution's error by 11%, showing good and scalable prediction capabilities.