Traineeship Opportunity

TR-2015-004   Trainee in forecasting or statistical analysis of air traffic

Directorate/Service

Brussels (Belgium) - Network Manager/Performance, Forecasts, Relations/Forecasts & Network Intelligence Unit

Purpose

If you are an undergraduate or a graduated student with a degree course in mathematics or a related subject, with excellent grades, skills in statistical analysis or forecasting, an interest in aviation, and used to SAS or R, then this could be something for you.

We are looking for one or two students for a summer traineeship tackling one of the projects listed below, or a variation on one of these projects.

This would be a chance for you to try out some of the techniques you have learned at university on some real-world problems. It should help us to understand the data better and (in the best-case-scenario) end up with a new tool which we can add to our traffic analysis and forecasting toolbox. The outcome will be a short report, presentation and ideally some code which we can reuse.

Main responsibilities

You will be guided by a mentor and:
- take part in a project on topics such as the following under the supervision of the team;
- participate in other activities:

Cancellation data: We have been collecting data on flight cancellations for the last year, and the data are growing in quality. Where the data allow comparison, what is the correlation between delays and cancellations (in terms of total volume or type of delay)? Do the results for one airline tell us anything about another?

Weather delays: We have data on two sorts of delay: those which measure what flow managers do, and those experienced in full by airlines. When we estimate future weather delays, we have the impression that we are often taken by surprise, but is this a real problem when you look across the whole year? Are we making the wrong assumptions about the distribution of weather delays? What is the distribution? Is it the same for the two types of delay? How could we improve our estimates?

Military traffic: A small percentage of the flights controlled by civil controllers (IFR flights) is classified as military. We use a simple smoothing algorithm to forecast the next 7 years of traffic. How good is this assumption? What other techniques could we use, and would they be better in practice?

Low-cost traffic: We have been publishing statistics on the proportion of low-cost flights in Europe for 12 or more years. We have built assumptions about the growth of the low-cost market share into our forecasts. What is the pattern of low-cost market share growth (is there a good fit from a logistic or Gompertz distribution, for example)? Were the assumptions we made in past forecasts correct? Could we make better forecasts of future market share (e.g. by country) using a better technique?

Taxi times: By adding a taxi-out time to the airline-provided expected off-blocks time (EOBTs, see field 13 of the ICAO flight plan), the Network Manager determines an expected take-off time (ETOT) for

each flight. Can the actual taxi-out times reported by airports (under the Single European Sky Performance Scheme) be used to improve the predictability of the ETOTs?

Preferred profile

- Currently studying for a degree course in mathematics or a related subject, such as statistics, economics or engineering or having recently graduated in such domains.
- Excellent grades.
- Good communication and interpersonal skills. Pro-active approach.
- Skills in statistical analysis or forecasting which you are ready to try out.
- An interest in aviation.
- Some experience using either SAS or R.
- The working languages of the Agency are English and French. For this particular post, candidates must have an excellent command of English , and a working knowledge of French would be an advantage. The knowledge of an additional language would also be an advantage.

Desired duration, starting date and place of the traineeship

Summer traineeship from 2 up to 3 months

Eligibility

The traineeship should start within 18 months of completion of his/her studies. If the traineeship is part of the studies, the programme of the traineeship must be directly related to the subject of the studies. Candidates should have the nationality of one of the EUROCONTROL or ECAC Member States.

Applications

Candidates must complete the EUROCONTROL Application Form for traineeships.

The application must be sent by email to traineeship@eurocontrol.int together with copies of the following documents:
- ID card or passport
- Educational certificates
- Student card (if the traineeship is part of the educational programme)
- Programme of study (if the traineeship is part of the educational programme)

A recent criminal record sheet and proof of medical and accident insurance cover should be provided at the start of the traineeship.

The application form and other documents submitted will not be returned to unsuccessful candidates or be kept by the Agency.
The traineeship will be subject to the EUROCONTROL Agency Traineeship Programme Regulations.
More information can be found on our website at www.eurocontrol.int/jobs/traineeships.

When applying, specify the opportunity title and reference in the subject line.

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