

## **Master thesis project: Computer based analysis of the effect of airport constructions and terrain on ILS signal propagation.**

Instrument Landing System (ILS) is a VHF/UHF radio navigation system, guiding aircraft through approach and landing in low visibility conditions. ILS is sensitive to multipath caused by airport buildings, taxiing aircraft and the surrounding terrain. Several computer tools to predict their influence on the ILS signal exist. These tools are based on the electromagnetic principles *Physical Optics* and *Geometrical Theory of Diffraction*. The tasks for the master thesis are:

- Analyze strengths and weaknesses of existing tools
- Evaluate other electromagnetic methods
- Develop an electromagnetic method to predict the effect of humped runways on ILS propagation
- Design a computer tool to model humped runways for ILS electromagnetic predictions



### **Contact details**

Thor Breien  
Indra Navia AS  
Olaf Helsets vei 6  
NO-0694 Oslo, Norway  
thor.breien@indra.no

### **About Indra Navia**

Indra Navia designs, produces, and integrates cutting-edge communication, navigation, and tower systems for the world's leading airports and air traffic control organizations. Specializing in highly customized solutions, the company delivers long-term value under the most demanding conditions. More than 1200 airports around the world rely on Indra Navia's products for their reliability, proven track-record and low lifecycle cost. The company headquarters is in Oslo, Norway.