Training School, Low Wood Bay, Windermere, Cumbria, Lake District UK, September 14-16, 2011

Day 1: Wednesday 14th September

Tutorial Session: 9 – 15h
Presentations of the Research Fellows: 14.00-18.00h
Low Wood Bay

	Tutorial session
9:00 - 12:00	Professor Oliver Cappé, France, From Importance Sampling to Sequential Monte Carlo Methods
10:40 - 11:00	*Coffee*
12:00 - 13:00	Professor Simon Godsill, Cambridge University, United Kingdom Advances in Bayesian filtering using Monte Carlo methods
13:00 - 14:00	*Lunch*
14:00 - 14:45	Professor Simon Godsill, Cambridge University, United Kingdom Advances in Bayesian filtering using Monte Carlo methods
14:45 - 15:00	*Afternoon Tea*
15:00 – 17.30	Presentations of the fellows
15.00 - 15.30	AOKI Edson Hiroshi, Thales Netherland Energy efficient sensor scheduling for sensor networks of simple sensors
15.30 – 16.00	Nikolay Petrov, Lancaster University, United Kingdom Sequential Monte Carlo Methods for Extended and Group Object Tracking
16.00 – 16.30	Murat Aslan, Saab, Sweden Multiple target tracking in a ground sensor network
16.30 – 17.00	Giulia Battistello, FKIE Fraunhofer, Germany, GIS for multiple sensor air-to-ground surveillance and traffic monitoring
17.00 – 17.30	Katerina Tzavella, FKIE Fraunhofer, Germany GIS based track evaluation and anomaly detection
17.30 – 18.00	Melanie, Bocquel, Thales Nederland, Integrated information extraction
19:00	***Welcome Dinner***

Thursday 15h September

Presentations of the Fellows

Low Wood Bay

09.00 - 9:30	Fotios Katsilieris, Thales Nederland, Sensor management aspects
9.30-10.00	George Mathai, Saab, Sweden, Track-Before-Detect based on acoustic sensors
10.00 - 10.30	Francesco Papi, Exploiting prior sensor & environmental knowledge
10.30 – 10.45	*COFFEE*
10.45 – 11.15	Anna Zvikhachevskaya, Lancaster University, United Kingdom Localisation in Unknown Urban Environment
11.15 – 11.45	Marek Syldatk, Saab, Sweden, Localization and calibration of ground sensors
11.45 – 12.15	Denis Rodionov, Rinicom UK, Localization and positioning on WiMAX networks
12.15 – 12.45	Manon Kok, Linköping University, Sweden, Magnetometer calibration methods
12.45 – 13.45	*Lunch*
13:45 - 14:15	Miao ZHANG, Xsens, Netherlands, Indoor orientation and tracking system using MEMS
14:15 - 14:45	Kirill Bushminkin, Rinikom, UK, Ad Hoc Mesh Sensor Networks
14:45 - 15:00	Michael Roth, Linköping University, Sigma point approaches to extended Kalman filtering
15:00 – 15:30	*COFFEE*
15.30 – 16.00	Discussions

Presentations at Lancaster University, INFOLAB21, Room C74 (morning) and a visit to Rinicom (afternoon)

Note: Coach to leave at 8:30 from Windermere, Lake District to Lancaster University

Suggested presentations

10:00 - 10:10	*COFFEE*
10.10 - 10.30	Welcome by the Dean of Lancaster University, Prof. Mary Smyth
10:30 – 11.10	Professor Garik Markarian, Lancaster University
11:10 - 12:00	Dr. Simon Maskell, Qinetiq, A large-scale particle filter for tracking numerous low-observables
12:00 – 12.40	Dr Daniel Clark, Heriot-Watt University, Edinburgh, Bayesian Filtering for Multi-object Systems
12:40 - 13:40	*Lunch and coffee*
13:40 - 16:00	Showing of prototype systems at Lancaster University and equipment from RINICOM and AEROFLEX
16.00 -16.30	Coffee
16.30 – 18.00	Showing of prototype systems at Lancaster University and equipment from RINICOM and AEROFLEX

Coach departs from Lancaster University at 18.00 for the Lake District.

Abstracts of the tutorials

From Importance Sampling to Sequential Monte Carlo Methods
Prof. Olivier Cappé
Telecom ParisTech & CNRS
Paris, France
Email: cappe@telecom-paristech.fr

This tutorial will cover the main building blocks used in constructing Sequential Monte Carlo (in short, SMC, also known as particle filtering) techniques. We will start from the basic importance sampling method and will then move to SMC approaches and cover more advanced aspects such as auxiliary methods, smoothing and parameter estimation. We will insist on quantitative measures and diagnostics that can serve as guidelines when using SMC as well as on the interpretation of theoretical results regarding the convergence of SMC approximations.

Advances in Bayesian filtering using Monte Carlo methods
Prof Simon Godsill
University of Cambridge
Cambridge, United Kingdom
Email: sjg@eng.cam.ac.uk

In this survey I will cover various aspects of the Bayesian filtering problem. I will start with a basic overview of state-space methods and particle filters in their standard form. Then I will

consider more exotic recent developments including Monte Carlo smoothers, the incorporation of Markov Chain Monte Carlo (MCMC) methods into the filters, and SMC sampler-based approaches to the problem. I will illustrate with applications in multiple object tracking, group object tracking and musical note transcription from raw audio data.

Venue for the Training School

Low Wood Bay
Ambleside road, Windermere, Cumbria LA23 1LP
Tel:015394 39441
Web site: englishlakes.co.uk

http://www.englishlakes.co.uk/hotels/lowwood/index.aspx

Room Booking:

English Lakes	**T 015394 39440**
Group Sales Office	**F 015394 39475**
Low Wood Bay	**E sales.coordinator@englishlakes.co.uk**
Windermere	**W englishlakes.co.uk/conferences**
Cumbria	
LA23 1LP	

Travel from abroad
- Nearest Airport is Manchester International Airport

Recommended airlines
- **KLM, easyJet**
- **Luftshana Airlines**
- **SAS Airlines**

Travel from Manchester Airport to Windermere/ Low Wood Bay

Manchester International Airport is the nearest Airport to Windermere. From Manchester Airport you can travel by train to Windermere Station (see http://www.thetrainline.com/buytickets/? or http://www.rail.co.uk/ukrail/planner/planner.htm for train timetable), the trains are hourly, and then take a taxi to your chosen hotel. It takes about two hours to travel from Manchester Airport to Windermere.

Other hotel Accommodation in Windermere
Please see link: http://www.lakedistricthotels-cumbria.co.uk
           http:// www.hotelsonwindermere.co.uk