GRACE

GNSS Research & Applications Centre of Excellence











GNSS Research & Applications Centre of Excellence



Aim:

To secure international leadership in research, training and industrial applications development of Global Navigation Satellite Systems (GNSS) - within the East Midlands.

Built from a core of :

- –World leading University research & training capability
- -Innovative SME industry base
- -Close collaborative links with industry
- -Extensive user base potential











GNSS Research & Applications Centre of Excellence



Space Applications in the East Midlands:

- £104 m turnover (2008)
- £58 m direct GDP, 400 direct jobs (2008)
- £136 m value added, 2500 indirect jobs (2008)
- Downstream services; telecomms, GNSS & EO
- 20% of UK "advanced applications" market

The Case for Space: The Impact of Space Derived Services and Data Final Report – May 2009













Secure the region's internationally leading reputation for excellence in this sector

Support the commercial exploitation of academic GNSS research and encourage the development of innovative products and services in the East Midlands

Embed GNSS systems and applications expertise within the regional economy and develop indigenous businesses throughout all parts of the value chain













Create new employment opportunities including jobs that will encourage graduate retention in the region

Deliver continuous professional development courses and support for industry personnel

Facilitate international collaborations and support inward investment

Support efforts to attract GNSS assets, facilities and services to the region











GNSS Research & Applications Centre of Excellence



A new centre, a new building, a new focus; encompassing:

- –GNSS Research Laboratory and Training Services
- -GNSS Applications Development Support
- –Access to GNSS simulation, test-bed and testing facilities
- -Dedicated Training Suite
- -Business Incubation Units
- -Business Support Services
- -Supported Consultancy Activity

-Potential venue for virtual & physical National Offices

-A Hub for a GNSS Cluster













- TRANSPORTATION/LOGISTICS
- CONSTRUCTION
- HEALTHCARE
- FOOD AND DRINK (AGRI)
- SURVEYING
- ENVIRONMENTAL
- SECURITY











Nottingham Geospatial Building





New : October 2009 2000 m² 120 m² incubation space



Simulation & testing facilities RFID @ 30cm spacing UWB Positioning, Locatalites











University Of Nottingham Innovation Park (UNIP) GRACE



12 Acre site with initial capacity for 20,000 sqm development









GRACE Funding



Apr 2007 – Mar 2012

emda	£3504k
University	£4225k
Industry	£1492k

Total

£9221k

£4500k

£1000k

£1220k

£2500k

Capital Build
Equipment
Additional Staff
Other costs













Regional deliverables include:

- jobs created/safeguarded
- businesses created/attracted
- businesses assisted
- businesses engaged
- regeneration
- people assisted with skills development











GNSS Research & Applications Centre of Excellence



Personnel

- 5 full-time staff
 - General Manager
 - Business Development Manager
 - 2 Application Development Officer
 - Administrator
- 3 part-time staff
 - Application Development Officer (shared)
 - ESNC Project Manager (contract)
 - Reception / Admin (casual)
- Future:
 - Additional Business Development Manager
 - Training & Services Development Officer











GNSS Research & Applications Centre of Excellence



- Nottingham Shanghai GNSS Laboratory
- Ordnance Survey
 - Regional Office, up to 7 staff
- G2WAY/ARMS
 - 2 New Start-ups
- Inndie
 - New Start-up
- CAECUS
- KANQ Digital





G2way











@rms



EGNOS in urban environments (Improved coverage) – ESA KIS4SAT (Business Services) – EC FP7 SCENIC (Testbeds & Simulators) – EC FP7 TEST CASE (Testbeds & Simulators) – EC FP7 PRECISIO (High Precision SDR Receiver) – EC FP7 CIGALA (Ionospheric Scintillation) – EC FP7 ENCORE (High Precision Low Cost Receiver) – EC FP7 iNsight (New GNSS Signals) – EPSRC











Commercial Project Activity

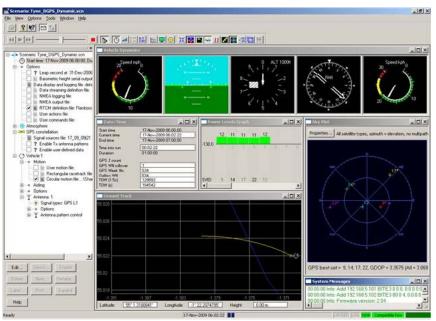


Compulogic	Oil Slick Detection	Rockwell Collins	Indoor Navigation & New Sensors
Ordnance Survey [®]	High end Receiver Benchmarking	NSL	Urban Multipath Modelling
u e s t	Bespoke GNSS Training	Res Returber	Integrated Navigation
Trinity House	GPS Constellation Scenario Tests	NetworkRail	GNSS Expert Consultancy
I LESS Institute of Ingineering Surveying & Soace	G eSINET	EBN supported by	east midlands development agency

GALILEO & GPS EMULATION



SIMGEN software



SPIRENT GSS 8000

GPS + Galileo

96 channel RF simulator











Roof Based Laboratory





- Track length 120m
- Speed Variable up to 7.2 km/hr
- Locomotive mass 400kg
- Payload mass 100kg







GRACE



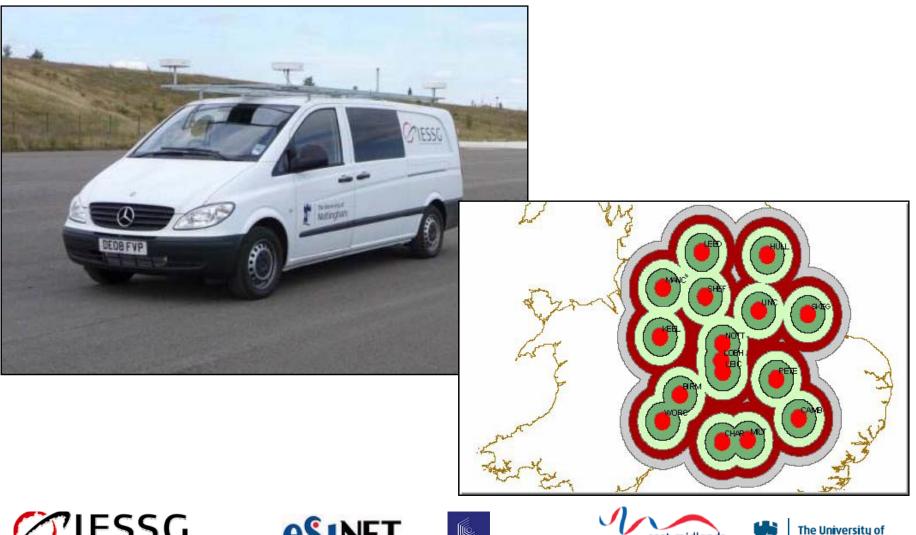
A PRACTOR





Unique environment for repeatable testing of integrated positioning systems

Mobile Test Facility and Wireless **Test-beds**











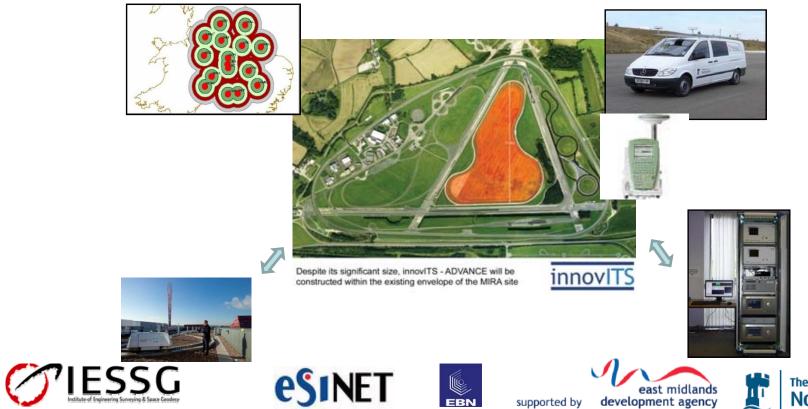


GRACE

East Midlands Transport Test-bed







The University of Nottingham

Portal for the GNSS Community





GRACE is an internationally recognised centre of excellence that focusses on the applications of downstream satellite navigation technologies. GRACE has been extablished to assist businesses to take advantage of the growing market for services and applications that use GNSS (Global Navigation Satellite Systems) and PNT (Position, Navigation and Timing) technologies. It provides a state-of-the art environment in which to locate your business, interact with the GNSS community and develop world-class products and services. more









supported by development agency



Connect and network

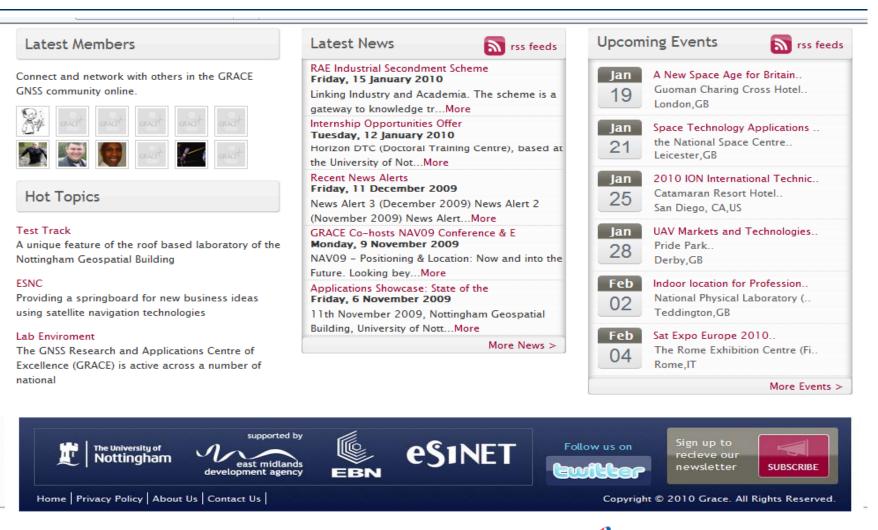


The University of

Nottingham

east midlands

development agency



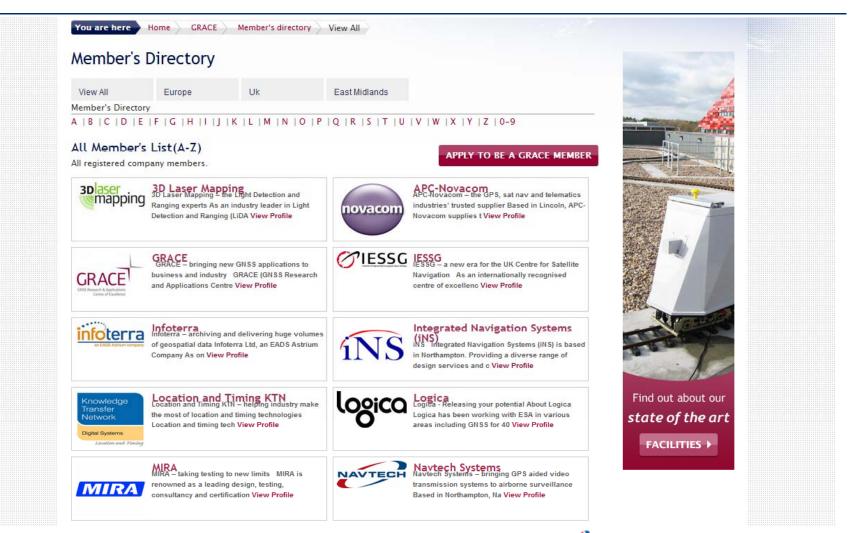






GNSS Directory















A Calendar of GRACE Organised Events



Events Calendar GRACE Events (All) <u>Upcoming Events</u>	GRACE Events					
	Date	Event Name	Venue	County/City	Category	
Past Events	Mar 25	Transport Applications Showcase (iNet) G	Sir Colin Campbell Building	Nottingham	GRACE Events	
	Mar 25	Official Opening of the Nottingham Geospatial Building G	Nottingham Geospatial Building	Nottingham	GRACE Events	
	Apr 22	SPIRENT Applications day G	Jubilee Campus	Nottingham	GRACE Events	
	мау 17	Lecture from Prof. Kibe, Heac of Indian GNSS Programme at ISRO G		Nottingham	GRACE Events	
	Jun 21	Second Open Source GIS UK Conference – OSGIS 2010 G	Nottingham Geospatial Building	Nottingham	GRACE Events	



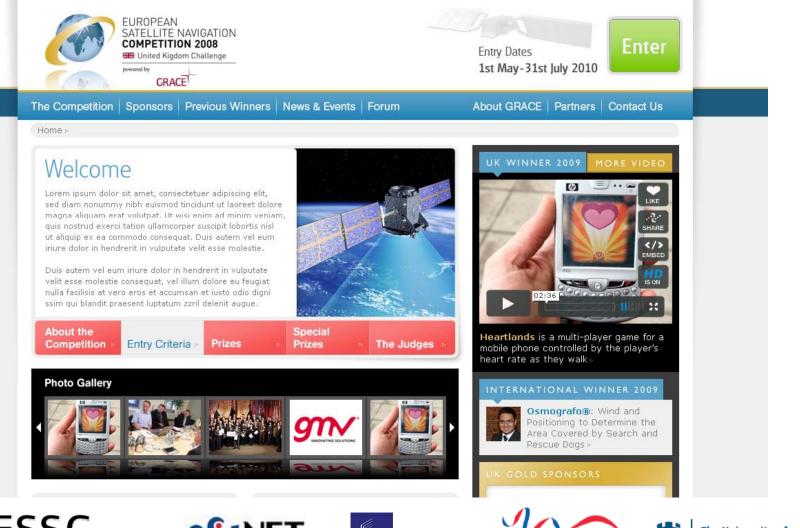








European Satellite Navigation Competition UKESNC 2010









supported by development agency



GRACF

European Satellite Navigation Competition ESNC 2010





attend.

winners.

Venue





development agency supported by



GRACE

Technology Strategy Board

Royal Institute of Navigation

Collective inspiratio

The University of Nottingham

SPIRENT

SAMSUNG

supported by

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development agency



Partner Networks Building national and international links



UK:

Digital Systems KTN Location and Timing Group

RIN

East Midlands INet

EMSpaceNET (NEREUS EM)

Europe:

ESINET/EBN

ENCADRE / EURO INNOVA

INNOFITS / LIVING LABS

TELEMATICS VALLEY

NEREUS

China / India / New Zealand / Australia















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