

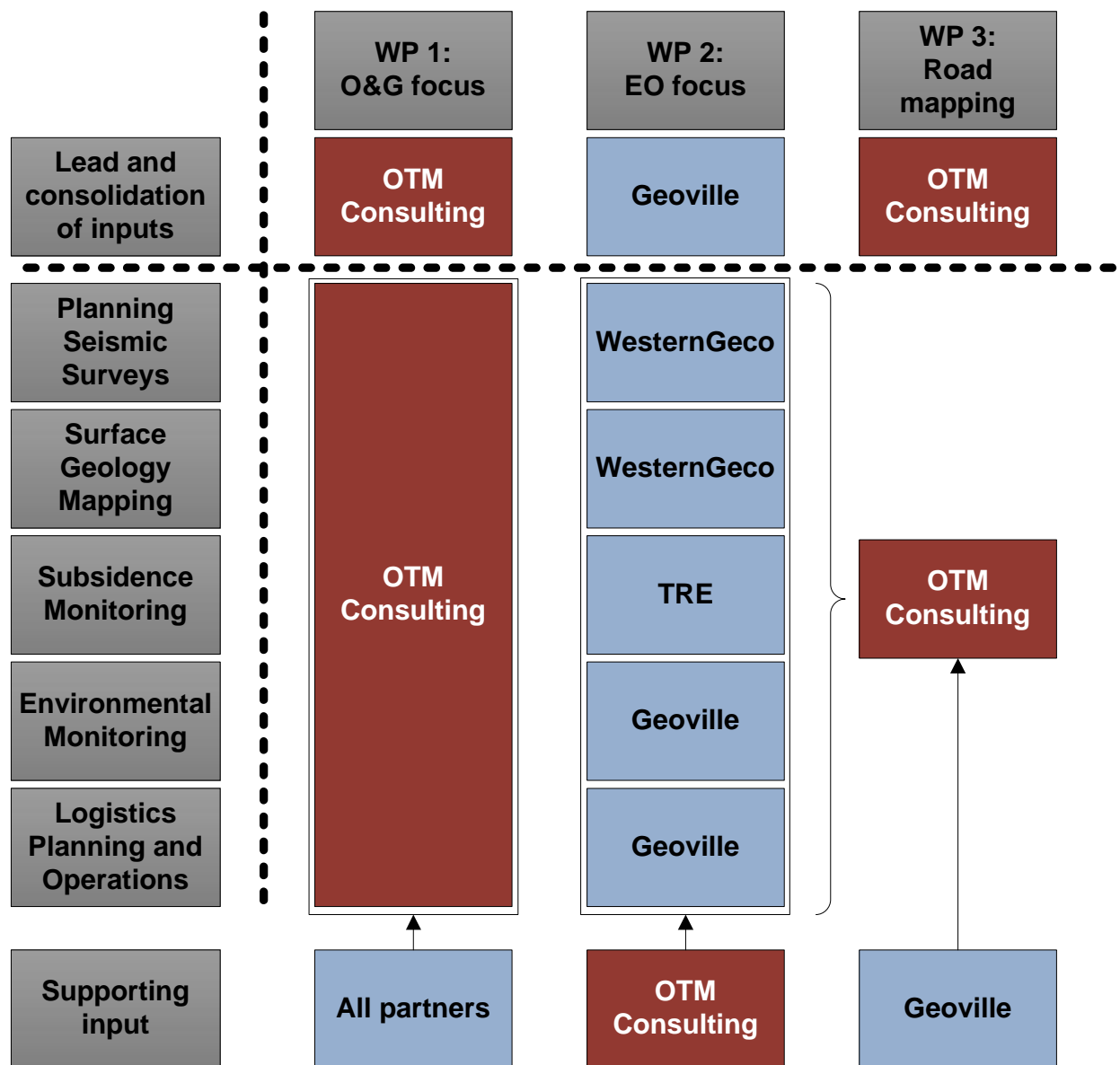


EO for Oil and Gas Onshore

Proposal from OTM Consulting,
together with

- Geoville
- WesternGeco
- TRE

Team organisation



Geographical focus for project

Our geographical portfolio for this study

- Mexico
- Turkey
- South Sudan
- Congo
- Uganda
- Algeria
- South Africa
- Tanzania



Partners in our team: OTM



OTM Consulting Ltd – Oil and Gas Technology Consultants

- A subsidiary of Sagentia Group
 - Based in UK, with offices in Houston, Boston, Dubai
- We help companies in the O&G sector extract maximum value from investments:
 - Identify technology opportunities and threats
 - Decide which technologies to invest in, and how best to do that
 - Apply technologies better and faster
 - Engage with technology practitioners

■ Some of our clients:



■ Some example projects

- E&P Nanotechnology roadmap
- Development of industry guidelines for subsea HPHT pipeline design
- O&G technology opportunity study in emerging O&G markets for major service company
- Emerging technology and science R&D – a strategic study for an IOC

Partners in our team: OTM



OTM Consulting – key team members

▪ **Andy Bowes Lyon – Project Manager**

- PM experience includes the launch and management of multi-national R&D JIP
- Advised various IOCs on game-changing emerging technologies
- Commercialisation lead for numerous R&D programmes

▪ **Mark Butcher – Industry consultation lead**

- Recently led major industry consultation for Japanese Government agency on unconventional
- Background as a civil and environmental engineering project manager for Atkins
- OTM lead on produced water management

▪ **Shreekant Mehta – Project director**

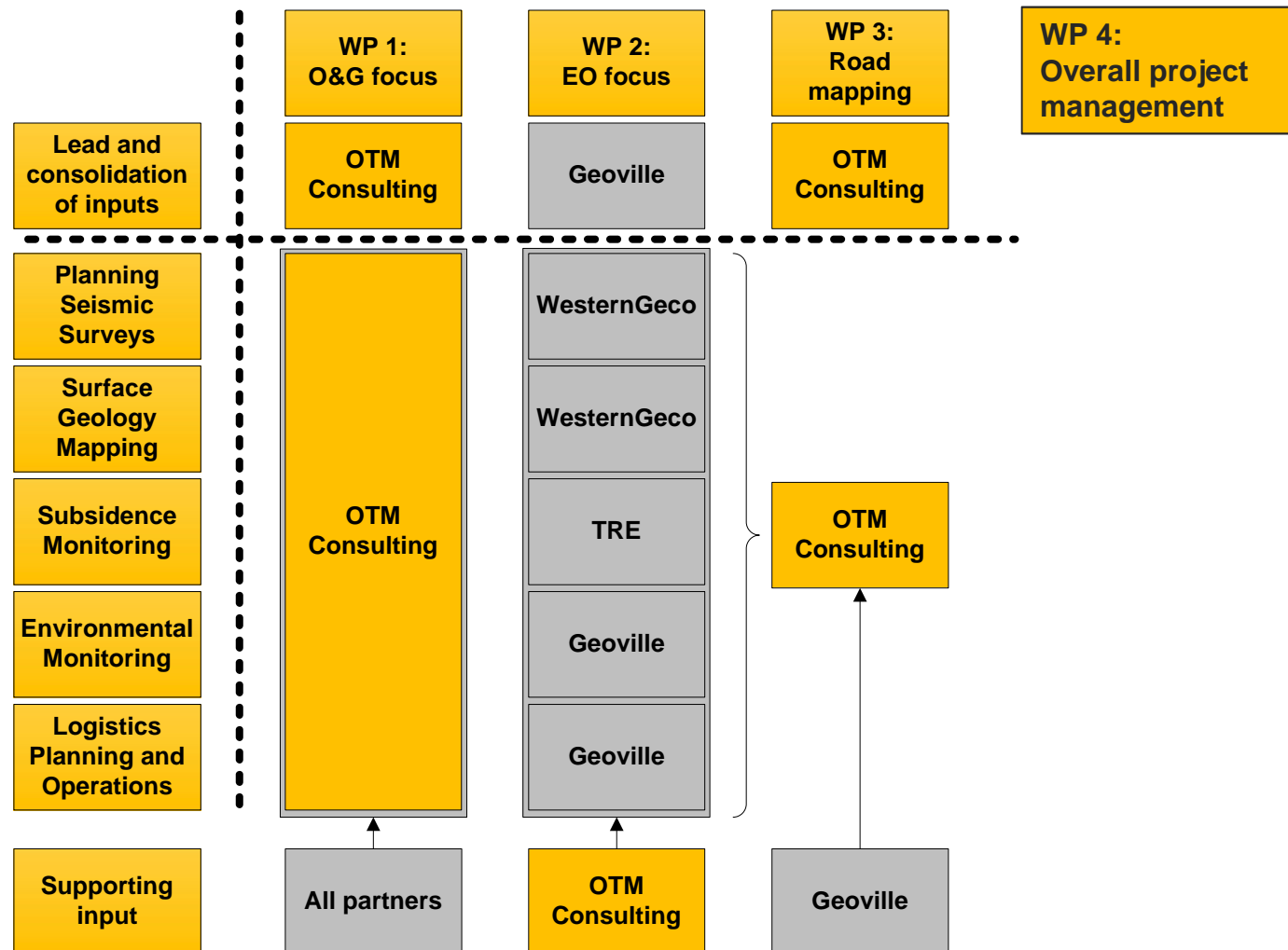
- Operations Director and Senior VP of OTM
- Over 20 years O&G and consulting experience, including roles with Schlumberger
- Consulting history includes: R&D management, commercialisation, technology strategy and strategic market intelligence.

▪ **Michael Simioni – Road-mapping lead**

- Technology strategy lead for OTM
- 10 years experience in O&G
- PhD relating to CCS / Gas separation
- Developed technology landscapes, gap analysis and prioritisation studies for major IOCs
- Extensive Mexican experience

Partners in our team: OTM

OTM responsibilities for this project:



Partners in our team: GeoVille



GeoVille Group – doing the spatial job through a satellite's eye

- **Company seats & representation:**
 - Innsbruck (AT); Niederaanven (LUX); Washington, D.C. (US)
- **Turnover 2013:** \$ 5.2 Mio US\$
- **References:** > 120 countries; > 370 projects
- **We provide products and services related to Earth Observation (EO) and Geographic Information Systems (GIS) applications**
- **Project examples**
 - Land cover monitoring & habitat impact mapping
 - Ecosystem monitoring & valuation
 - Spatial monitoring of oil production facilities
 - Logistics and transport planning
 - Editorial, graphical and dissemination work



GeoVille 2014

Partners in our team: GeoVille



Some of our clients

International Institutions

European Union, European Environment Agency, International Fund for Agricultural Development, European Space Agency, United Nations Programmes

International Development Banks

World Bank, European Investment Bank, EuropeAid

National & regional authorities

Various ministries and agencies for environment, agriculture, forestry, research and transportation worldwide

Private sector

Telecommunication, Consulting, Construction, Financial Sector, Oil & Gas



Partners in our team: GeoVille



Habitat impact mapping, Gulf of Mexico & Monitoring of oil production facilities, Ghawar oilfields



The U.S. will attempt to catch more than 100,000 Atlantic bluefish in the Gulf of Mexico, according to a report from the U.S. Fish and Wildlife Service.

...the case was made that the fish had been affected by a spill, and it was not clear if the spill was the cause of the problem. The article also mentions that the spill has caused damage to the surrounding environment, including the destruction of coral reefs and the death of other marine life. The article concludes by stating that the spill has caused a significant loss of biodiversity in the Gulf of Mexico.

...the case was made that the fish had been affected by a spill, and it was not clear if the spill was the cause of the problem. The article also mentions that the spill has caused damage to the surrounding environment, including the destruction of coral reefs and the death of other marine life. The article concludes by stating that the spill has caused a significant loss of biodiversity in the Gulf of Mexico.

The Wall Street Journal - January 2011

Our Company | Professional | Anywhere

[HOME](#)
[QUICK](#)
[NEWS](#)
[OPINION](#)
[MARKET DATA](#)
[PERSONAL FINANCE](#)
[TECH](#)
[POLITICS](#)
[SUSTAINABILITY](#)

Saudi Output Growth Can Help Forestall Peak Oil, Bernstein Says

By Greg Walters - April 23, 2008 05:32 EDT

April 25 (Bloomberg) -- Saudi Arabian oil output has the potential to rise, helping avoid a peak in world crude production, according to Sanford C. Bernstein & Co.

Oil prices may fall toward the end of this year as worsening economic conditions reduce demand, analysts **Neil McMahon** and **Ben Dell** forecast in a report today. Prices will probably rise later, beyond 2010, and reach \$114 a barrel by 2015 as spare capacity declines, they wrote.

"Saudi and global oil production has the potential to grow slowly going forward," the authors wrote. "We do not believe world oil production supply is peaking today."

Proponents of peak-oil, the theory that global production has or is about to reach its zenith, say booming demand and dwindling supply are responsible for the rising price of oil. Analysts debate the extent and timing of a drop in crude production in Saudi Arabia, the world's biggest oil exporter. Some argue Saudi Arabian Oil Co., known as Saudi Aramco, is downplaying reservoir declines and that the country may be forced to reduce output.

Sanford Bernstein commissioned a survey by GeoVille Information Systems to use satellites to monitor drilling at Ghawar, Saudi Arabia's biggest oil field. The analysis "concludes that the Saudi peak oil production conspiracy theories, based on little or incomplete current field data, do not fit with our findings."

The study processed field data from recent years to try to detect subsidence, or sinking, in the reservoir. Rapidly depleting reservoirs tend to collapse slowly in small "micro-earthquakes" if oil and gas are extracted too rapidly for water or other substances to fill the gaps, McMahon told Bloomberg News in December.

The study suggests Ghawar is "not in significant reservoir trouble," the report said. The field may be showing signs of "mild production decline rates at worst." The field has been properly managed, it said.

Saudi oil output is likely to continue growth at a slower pace than forecast by Saudi Aramco.

To contact the reporter on this story: **Greg Walters** in Moscow gwalters1@bloomberg.net

To contact the editor responsible for this story: **Daniel Tilles** at dtilles@bloomberg.net

Bloomberg - April 2008

Partners in our team: GeoVille



GeoVille – key team members

- **Maria Lemper – Project Manager**
 - Coordination of international projects
 - Experience in editing, producing and laying out high level communication documents
 - Editorial production manager and graphics designer of all promotion and dissemination material

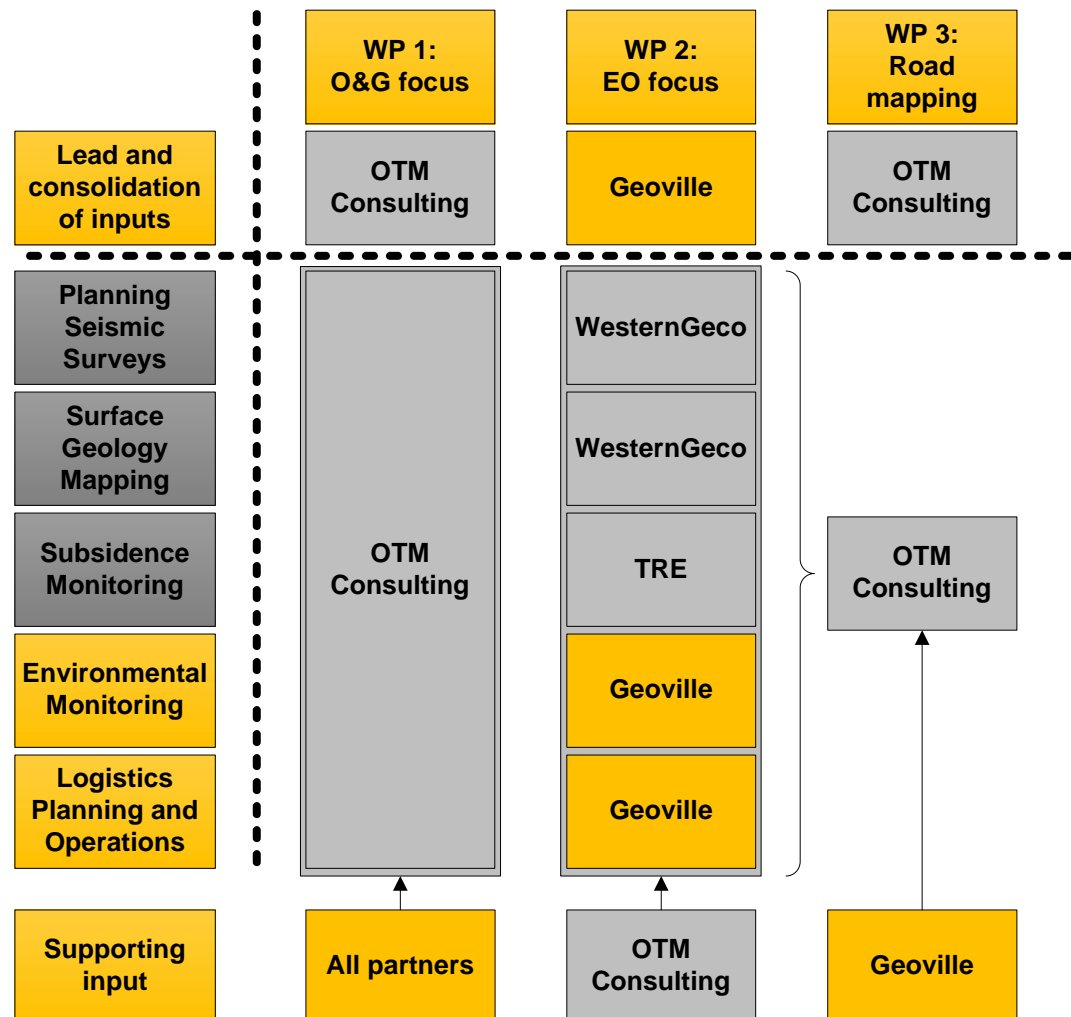
- **Christian Hoffmann – Project Director**
 - Founder of GeoVille Group
 - Over 15 years of experience in earth observation and GIS applications working for the United Nations, the European Commission and Intergraph

- **Ute Gangkofner – Scientific Director**
 - GIS and remote sensing expert
 - Technical lead for establishing the “current EO capabilities and use” for the applications

Partners in our team: GeoVille



GeoVille – project responsibilities

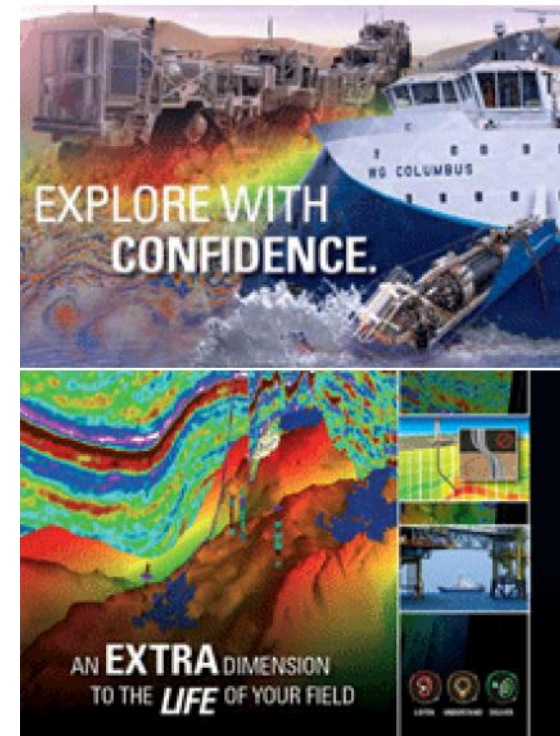


Partners in our team: WesternGeco



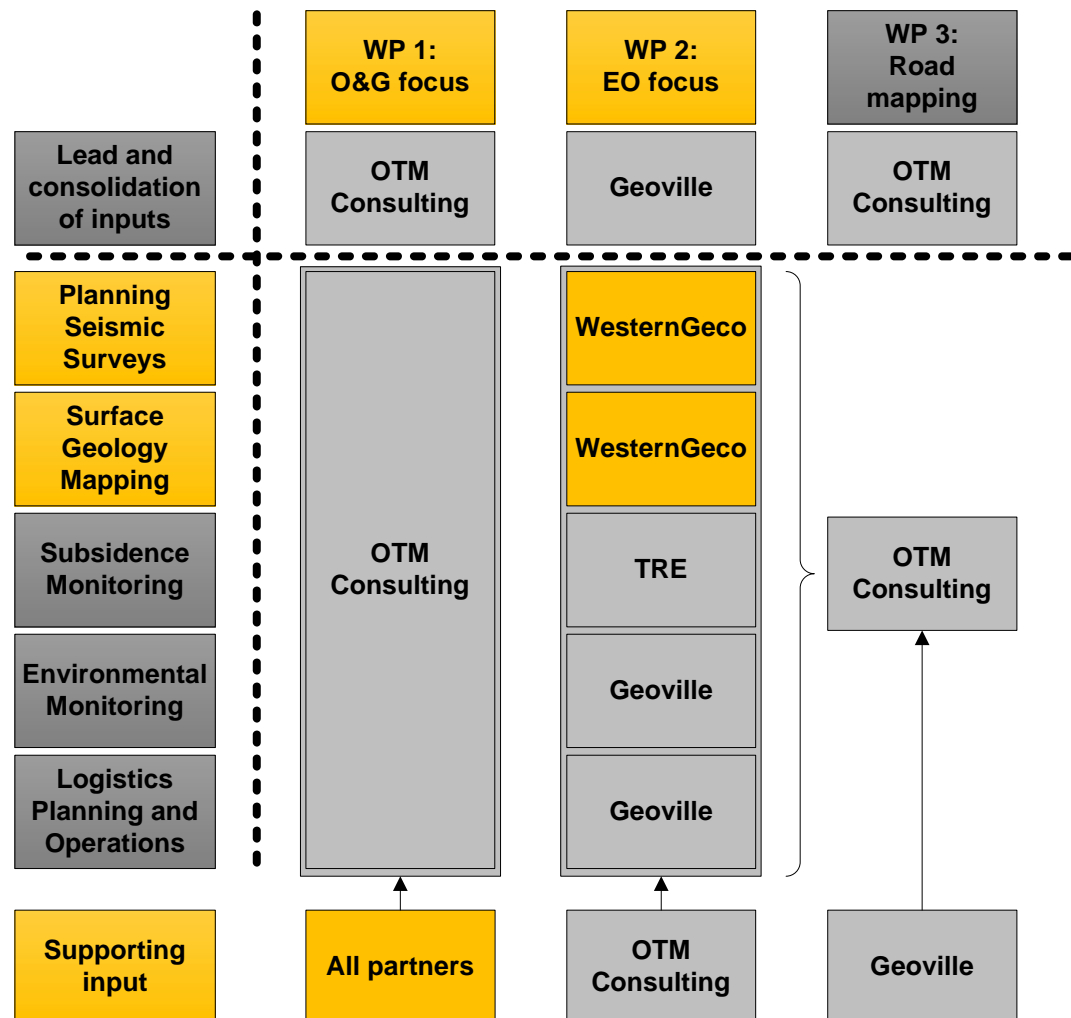
WesternGeco – Seismic acquisition technologies and techniques for subsurface imaging

- Segment of Schlumberger
 - Headquarters in Gatwick, UK
 - Industry leaders in seismic technology
- Seismic Planning and Surface Geology
 - Several papers and patents published with EO data
- Andrew Cutts – Senior GIS Engineer.
 - 8 years of experience with remote sensing and seismic data acquisition on worldwide projects



Partners in our team: WesternGeco

WesternGeco project responsibilities:



Partners in our team: TRE



TRE – InSAR Ground Deformation Monitoring

- A spin-off company: Politecnico di Milano
 - Offices in Milan, Italy (headquarters) and Vancouver, Canada
 - Example clients: eni, BP, Shell, Total, GDF, Edison, KOC, Storengy, Fluxys, Westerngeco
- Monitoring Ground Subsidence
 - 14 years' experience with over 200 projects worldwide, including: Algeria, Congo, Jordan, Oman, Kuwait, Iraq, Egypt, Canada, USA
 - Principle markets: Oil & Gas, infrastructure, natural hazards and mining



Partners in our team: TRE



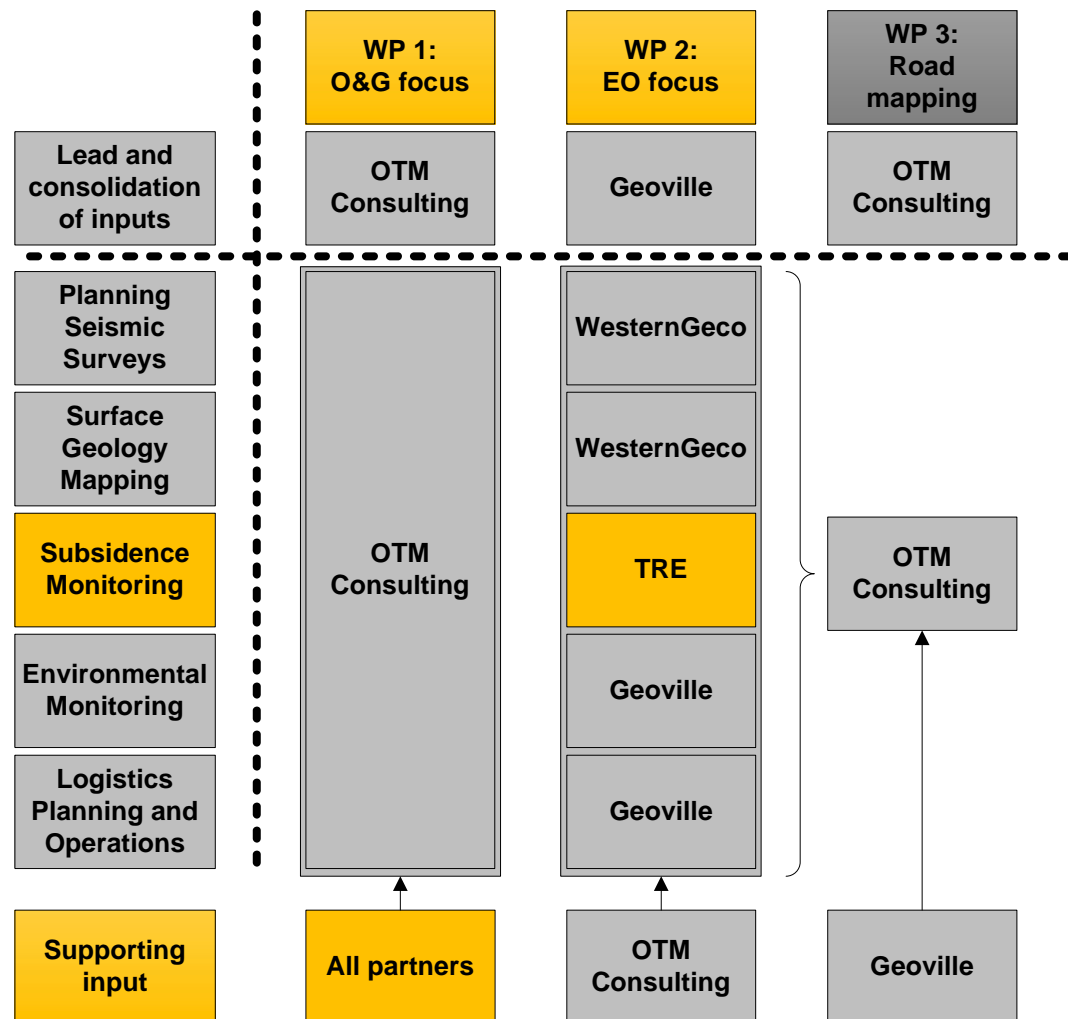
TRE – Key Team Members

Key Personnel	Role
Alastair Belson	TRE Project Manager Business development for O&G and UGS projects in Europe
Stefano Cespa	Sales Manager O&G Group leader for business development in O&G sector in Europe, ME and Asia
Andrea Tamburini	Senior Geologist Use of InSAR for geomechanical modelling for reservoir exploitation and CCS
Sara Del Conte	Geologist Application of InSAR for the study of geographical structures and O&G projects
Alessio Rucci	Senior Engineer Inversion and calibration of geomechanical models for CCS projects and reservoir monitoring



Partners in our team: TRE

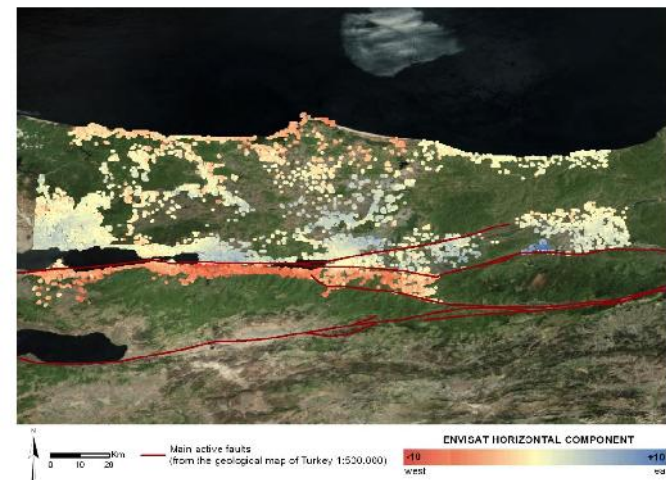
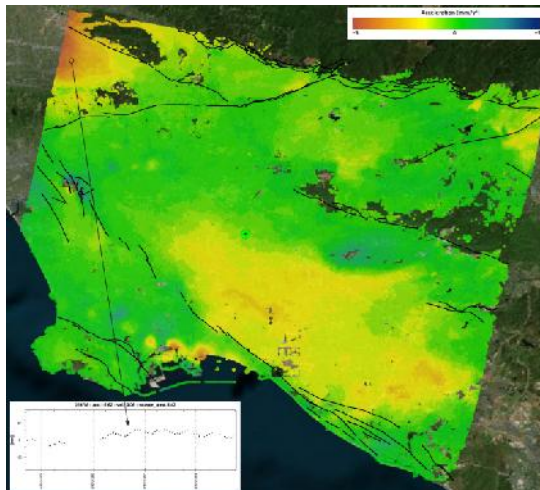
TRE - Project Responsibilities:



Partners in our team: TRE

TRE – Relevant Experience for Subsidence Monitoring

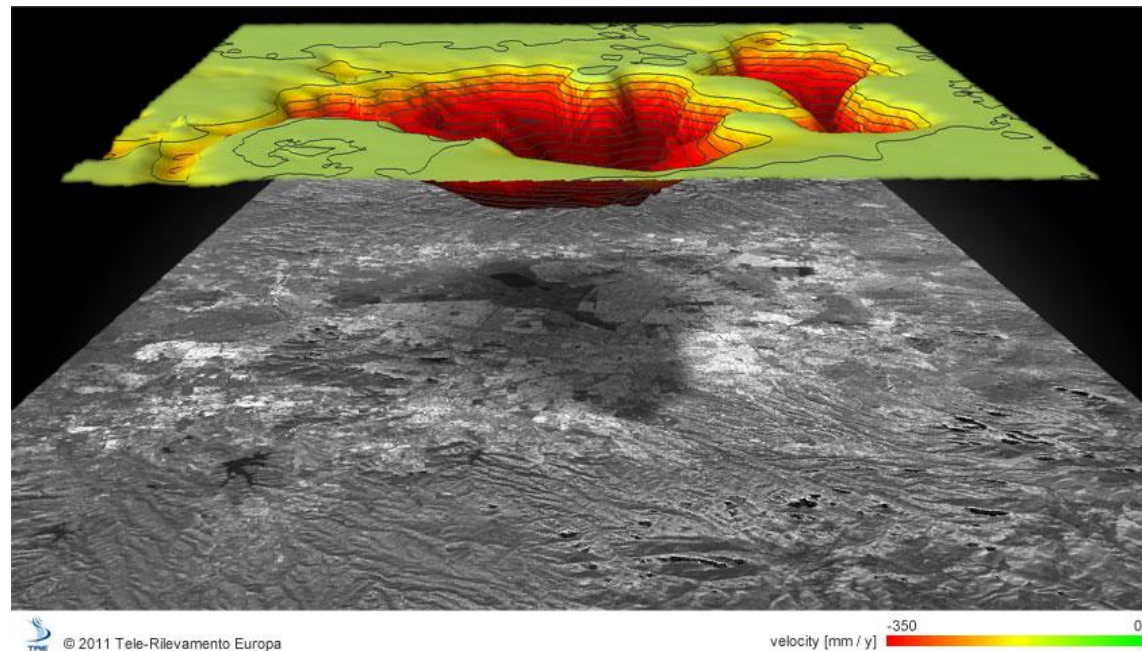
Application	Description
Land-motion	Relating to fault lines <i>Long Beach, California</i> Fault movement around O&G exploration areas
Land-motion	Relating to fault lines <i>North Anatolian Fault, Turkey</i> Large-scale fault movement



Partners in our team: TRE

TRE – Relevant Experience for Subsidence Monitoring

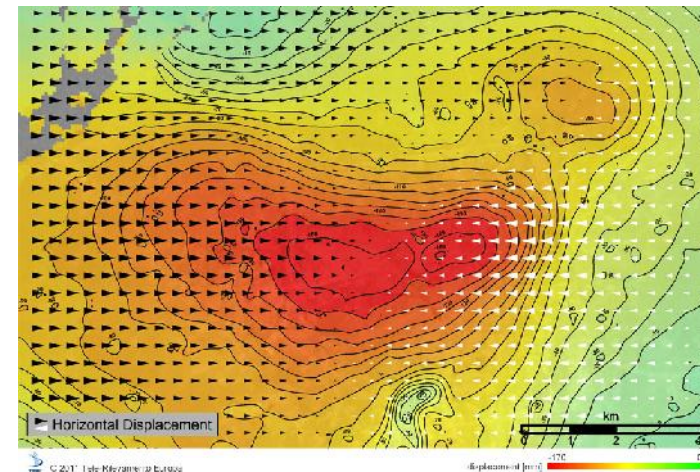
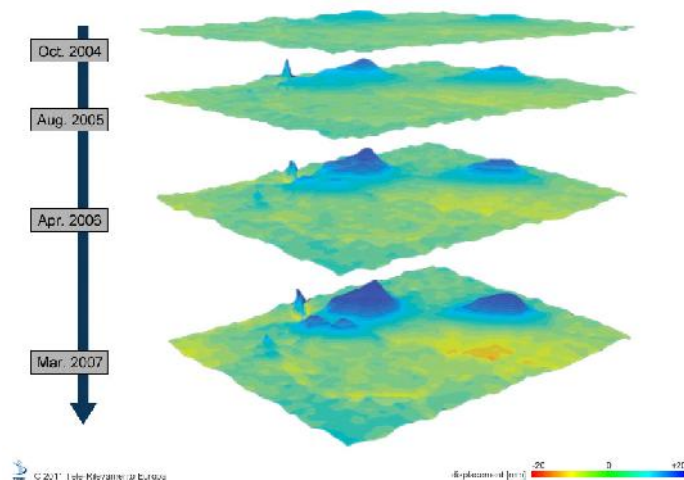
Application	Description
Infrastructure	Subsidence of buildings, roads, pipelines, etc. <i>Mexico City, Mexico</i> Regional subsidence



Partners in our team: TRE

TRE – Relevant Experience for Subsidence Monitoring

Application	Description
Reservoir Management	Carbon Capture and Storage <i>In Salah, Algeria</i> Long-term monitoring of uplift caused by injection into aquifer
Reservoir Management	Reservoir Depletion <i>Oman, Middle East</i> Subsidence monitoring induced by reservoir depletion



Key concerns

- Uniformity of deliverables
 - Agreed templates for components of each deliverable
- Coordination of OGEO members consultation
- Workshop dates

OTM Consulting Ltd

www.otmconsulting.com

Boston Cambridge London Houston Dubai

Sagentia Group

Harston Mill
Harston
Cambridge
CB22 7GG
UK

Tel: +44 1223 875200
www.sagentia.com

OTM Consulting Ltd

Friary Court
13-21 High Street
Guildford, Surrey
GU1 3DG
UK

Tel: +44 1483 598000

OTM Consulting Inc

12 Greenway Plaza
Suite 1100
Houston
TX 77046
USA

Tel: +1 832 330 7718

OTM Consulting Ltd

Reef Tower
Sheikh Zayed Road
PO Box 115738
Dubai
UAE

Tel: +971 4448 7595

EXTRA SLIDES



Geographical split between OTM / Hatfield

