Waves and Wave-Based Imaging in Virtual and Experimental Environments

Fact Sheet

Project Information

<table>
<thead>
<tr>
<th>WAVES</th>
<th>Funded under H2020-EU.1.3.1.</th>
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<tbody>
<tr>
<td>Grant agreement ID: 641943</td>
<td>Overall budget € 3 227 952,96</td>
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<tr>
<td>Project website</td>
<td>EU contribution € 3 227 952,96</td>
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<tr>
<td>Start date 1 January 2015</td>
<td>Coordinated by SORBONNE UNIVERSITE</td>
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<tr>
<td>End date 31 December 2018</td>
<td>France</td>
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Objective

Demand for highly trained scientists with a deep understanding of wave propagation in complex media, and capable of exploiting this knowledge to develop imaging tools for seismology and acoustics, is very high in the Earth and environmental sciences. Wave-based imaging serves to map spatial and temporal variations in the structure of the Earth's interior, of the oceans and atmosphere; it is used to monitor faults and volcanoes and detect natural-resource reservoirs. It is relevant to other disciplines, medical imaging being one of its most widespread applications. Today’s Earth scientists are faced with a set of questions that require the application of wave-based imaging at unprecedented resolution. WAVES aims at fostering scientific and technological advances in this context, stimulating knowledge exchange between seismologists and acousticians, and researchers in the public/private domains. A unique strength of our network resides in the participation of novel physical acoustics laboratories, managed by beneficiaries/partners of WAVES, with a strong record of experimental research on inter-disciplinary and seismology-related topics. WAVES will train young scientists working in academia or industry in how to use this resource
effectively, re-introducing the laboratory into the ideas-to-applications pipeline. Experimental work will serve to develop new theory, addressing topics of current interest such as acoustic time-reversal, scattering-based imaging. A truly interdisciplinary network, WAVES will apply these new ideas in a number of contexts: medical elastography is used as a tool to implement novel analogue models of seismic faults; wave sources are localized by a bio-inspired system making use of very few receivers, etc. Through WAVES, a critical mass of expertise will consolidate, defining the study of acoustic/elastic wave propagation and wave-based imaging/monitoring as an independent discipline, rich in applications of intellectual and societal relevance.

**Field of science**

/natural sciences/earth and related environmental sciences/geology/seismology
/natural sciences/earth and related environmental sciences/environmental sciences
/natural sciences/earth and related environmental sciences
/natural sciences/physical sciences/acoustics
/natural sciences/earth and related environmental sciences/geology/volcanology
/medical and health sciences/clinical medicine/radiology/medical imaging

**Programme(s)**

**Topic(s)**

**Call for proposal**

H2020-MSCA-ITN-2014

**Funding Scheme**

MSCA-ITN-ETN - European Training Networks

**Coordinator**

<table>
<thead>
<tr>
<th>SORBONNE UNIVERSITE</th>
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<tbody>
<tr>
<td><strong>Address</strong></td>
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<tr>
<td>21 Rue De L'ecole De Medecine</td>
</tr>
<tr>
<td>75006 Paris</td>
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## Participants (7)

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Country</th>
<th>EU Contribution</th>
<th>Address</th>
<th>Activity type</th>
<th>Website</th>
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</thead>
<tbody>
<tr>
<td>THE UNIVERSITY OF EDINBURGH</td>
<td>United Kingdom</td>
<td>€ 546 575,76</td>
<td>Old College, South Bridge, EH8 9YL Edinburgh</td>
<td>Higher or Secondary Education Establishments</td>
<td>Contact the organisation</td>
</tr>
<tr>
<td>NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU</td>
<td>Norway</td>
<td>€ 572 550,48</td>
<td>Høgskoleringen 1, 7491 Trondheim</td>
<td>Higher or Secondary Education Establishments</td>
<td>Contact the organisation</td>
</tr>
<tr>
<td>TECHNISCHE UNIVERSITEIT DELFT</td>
<td>Netherlands</td>
<td>€ 510 748,56</td>
<td>Stevinweg 1, 2628 CN Delft</td>
<td>Higher or Secondary Education Establishments</td>
<td>Contact the organisation</td>
</tr>
<tr>
<td>THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD</td>
<td>United Kingdom</td>
<td>€ 273 287,88</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Wellington Square University
Offices
OX1 2JD Oxford
Website
Contact the organisation

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS
France
EU contribution
€ 262 875,60
Address
Rue Michel Ange 3
75794 Paris
Website
Contact the organisation

INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE
France
EU contribution
€ 262 875,60
Address
Rue De Tolbiac 101
75654 Paris
Website
Contact the organisation

SCHLUMBERGER CAMBRIDGE RESEARCH LIMITED
United Kingdom
EU contribution
€ 273 287,88
Address
High Cross Madingley Road
Cambridge Cb3 0El 8Th Floor
South Quay Plaza, 2 Marshall Wall 183
E14 9SH London
Website
Contact the organisation

Partners (6)
<table>
<thead>
<tr>
<th>Organization</th>
<th>Country</th>
<th>Address</th>
<th>Activity type</th>
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<tbody>
<tr>
<td>Eidgenössische Technische Hochschule Zürich</td>
<td>Switzerland</td>
<td>Raemistrasse 101, 8092 Zuerich</td>
<td>Higher or Secondary Education Establishments</td>
</tr>
<tr>
<td>École Supérieure de Physique et Déchimie Industrielles de la Ville de Paris</td>
<td>France</td>
<td>Rue Vauquelin 10, 75231 Paris</td>
<td>Higher or Secondary Education Establishments</td>
</tr>
<tr>
<td>Trustees of Columbia University in the City of New York</td>
<td>United States</td>
<td>Amsterdam Avenue 1210, Room 10027 7003 New York</td>
<td>Higher or Secondary Education Establishments</td>
</tr>
<tr>
<td>Ludwig-Maximilians-Universität München</td>
<td>Germany</td>
<td>Geschwister Scholl Platz 1, 80539 Muenchen</td>
<td>Higher or Secondary Education Establishments</td>
</tr>
<tr>
<td>Universitetet I Oslo</td>
<td>Norway</td>
<td>Problemveien 5-7, 0313 Oslo</td>
<td>Higher or Secondary Education Establishments</td>
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<tr>
<td>Norway</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
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**Address**
- Forusbeen 50
- 4035 Stavanger

**Website**

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