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Anita Stein				EFG		Communication Officer	
Vitor Correia				EFG		President	
Contributing Authors				Org		Function	
Internal peer reviewers				Org		Function	
Isabel Fernández				EFG		Executive Director	
Internal approval			Org		Function		
Isabel Fernández			EFG		Executive Director		
External peer reviewer			Reviewing WP	Org		Function	
Balazs Bodo				CF		Senior Advisor	
External approval				Org		Function	
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Quality Manager	Jeroen van der Linden		Approved			04/09/2015	
Technical Manager	Stef Kapusniak		Approved			06/09/2015	
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Contents

1	EXECUTIVE SUMMARY	5
2	INTRODUCTION	5
2.1	THE VAMOS PROJECT	5
2.2	DELIVERABLE D1.5.....	6
2.2.1	<i>Objectives</i>	6
2.2.2	<i>Approach</i>	6
2.2.3	<i>Timetable</i>	6
3	NEWCASTLE STAKEHOLDERS WORKSHOP.....	7
3.1	WORKSHOP PROGRAM.....	7
3.2	PRESENTATIONS.....	9
3.3	PRESS RELEASE	9
3.4	LIST OF PARTICIPANTS	9
3.5	MEDIA IMPACT	10
4	ANALYSIS AND RECOMMENDATIONS.....	10

List of annexes:

Annex 1: Press release Newcastle stakeholder workshop

Annex 2: Participants list

1 Executive Summary

This report summarises the activities that occurred during the first ¡VAMOS! Stakeholder workshop as well as it outlines recommendations and strategies for the organisation of subsequent Stakeholder workshops and meetings.

The first ¡VAMOS! Stakeholder workshop was organised in Newcastle from 11 to 12 June 2015. This event was combined with the 2015 Council meeting of the European Federation of Geologists (EFG) attended by representatives from EFG's 24 national membership associations. The Stakeholder workshop programme focused on initial dissemination and awareness raising for ¡VAMOS!, informing a broad range of stakeholders from industry, academia and professional associations from all over Europe. A visit to SMD's facilities was organised, where discussions concerning the technological challenges of adapting seafloor mining technologies to submerged mining in open pits were moderated. Finally, the EFG Council Meeting discussed the strategies and means of stakeholder mobilisation for ¡VAMOS! in each of the 24 countries represented by EFG.

Based on these inputs and discussions, EFG recommends that further stakeholder workshops are organised on national and international level during the project. These workshops should vary in scale and scope from relatively small national gatherings to a large scale international dissemination action possibly combined with the Final Project Meeting.

2 Introduction

2.1 The ¡VAMOS! Project

Estimates indicate that the value of unexploited European mineral resources at a depth of 500-1,000 meters is ca €100 billion, however, a number of physical, economic, social, environmental and human constraints have as yet limited their exploitation. ¡VAMOS! will provide a new Safe, Clean and Low Visibility Mining Technique and will prove its Economic Viability for extracting currently unreachable mineral deposits, thus encouraging investment and helping to put the EU back on a level playing field in terms of access to strategically important minerals. Deriving from successful deep-sea mining techniques, the ¡VAMOS! mining solution aspires to lead to: Re-opening abandoned mines; Extensions of opencut mines which are limited by stripping ratio, hydrological or geotechnical problems; and opening of new mines in the EU. ¡VAMOS! will design and manufacture innovative automated excavation equipment and environmental impact monitoring tools that will be used to perform field tests in four mine sites across Europe with a range of rock hardness and pit morphology. ¡VAMOS! will:

1. Develop a prototype underwater, remotely controlled, mining machine with associated launch and recovery equipment
2. Enhance currently available underwater sensing, spatial awareness, navigational and positioning technology
3. Provide an integrated solution for efficient Real-time Monitoring of Environmental Impact
4. Conduct field trials with the prototype equipment in abandoned and inactive mine sites with a range of rock types and at a range of submerged depths

5. Evaluate the productivity and cost of operation to enable mine-ability and economic reassessment of the EU's mineral resources.
6. Maximize impact and enable the Market Up-Take of the proposed solutions by defining and overcoming the practicalities of the concept, proving the operational feasibility and the economic viability.
7. Contribute to the social acceptance of the new extraction technique via public demonstrations in EU regions.

2.2 Deliverable D1.5

2.2.1 Objectives

Deliverable 1.5 summarises the activities that occurred during the first ¡VAMOS! Stakeholder workshop as well as it outlines recommendations and strategies for the organisation of subsequent workshops and meetings during the project. Furthermore some of the initial views of external stakeholders are also collected regarding the project's objectives and how they compare to their expectations. This collection of information will contribute to align message contents in dissemination activities with stakeholders' expectations, accordingly with the evolution of the project and its findings.

2.2.2 Approach

According to sub-task 1.4.2 EFG organised the first stakeholder workshop in Newcastle from 11 to 12 June 2015. Key activities included the preparation of the programme in collaboration with the project coordinator and partners; venue reservation and speakers presentation confirmation; establishment of the list of stakeholders; preparation of the event webpage and circulars to ensure attendance; drafting and circulating a press release about the stakeholder workshop.

This deliverable provides an overview of the workshop programme, presentations given in relation to the VAMOS project, the press release issued after the event, the list of participants and the media impact. Finally, the report will conclude with an initial analysis of the stakeholders' view on the project and recommendations for subsequent stakeholder interactions via workshops as outlined by EFG and the work package leader.

2.2.3 Timetable

The delivery date for D1.5 is Month 10. An interim concept paper was circulated within the consortium in April corresponding to an interim deadline in M2.

3 Newcastle stakeholders workshop

3.1 Workshop program

The main goal of this workshop was to gain initial publicity via personal interaction and reach out to a broad range of Stakeholders on European and national levels. The programme focused on the challenges posed by mining in crowded or environmentally sensitive regions in Europe, triggering awareness raising for ¡VAMOS! and informing a broad range of stakeholders from industry, academia and professional associations from all over Europe. A visit to SMD's facilities was organised, where exchanges concerning the technological challenges of adapting seafloor-mining technologies to submerged mining in open pits were discussed. Finally, part of the EFG Council meeting was dedicated to discussions relating to strategies and means of stakeholder mobilisation for ¡VAMOS! in each of the 24 countries represented by EFG.

Thursday 11 June 2015

09.00	Registration
09.10	Welcome to the North of England Institute of Mining and Mechanical Engineers <i>Catherine Miller, President</i>
09.15	Introduction: geology of a busy region <i>David Manning, Newcastle University</i>
09.30	The future for coal <i>Paul Younger, University of Glasgow</i>
10.00	Potash in a National Park <i>Sirius Minerals</i>
10.30	<i>Tea and coffee</i>
11.00	Metals: new life in the North Pennines? <i>Rick Smith, FWS Consultants Ltd</i>
11.30	Viable Alternative Mine Operating system (¡VAMOS!) – Overview, objectives & ambition <i>Stef Kapusniak Business Development Manager – Mining, SMD Ltd</i>
12.00	Discussion
12.15	<i>Lunch</i>
13.00	Depart for field excursion part 1 & 2
18.30	Return to Newcastle
19.30	Dinner – Blackfriars Restaurant, Newcastle

Field excursion part 1: the Northumberland coalfield

Field excursion leader: David Manning

The Northumberland Coalfield has a long history of mining bituminous coals, dating back over 200 years. Surface mines are still operating and new surface mines are being planned. Current mining provides an opportunity to correct earlier environmental damage caused by both underground and previous surface mining, leading to the creation of amenity as well as improved landscapes. Exposures of coal bearing

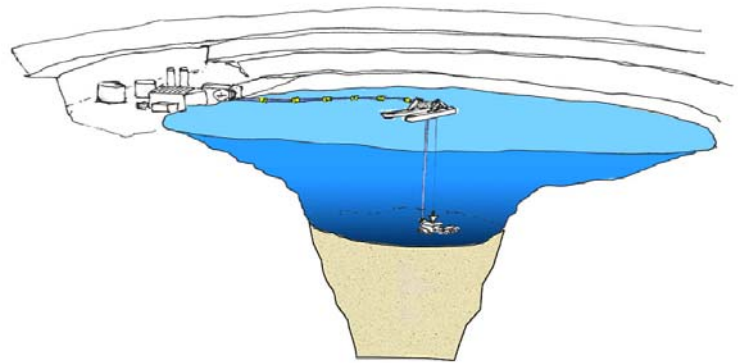


strata are excellent, both in working surface mines and in outcrops along the coast. This field excursion gave participants chance to see modern surface mining methods designed to minimize environmental harm, and to see key geological characteristics of the Westphalian coal-bearing strata

Field excursion part 2: Visit to SMD facilities and discussions on the proposed VAMOS technology

Field excursion leader: Stef Kapusniak

A study tour was organized to SMD shipyard to introduce the technologies already developed by SMD's mining business stream. During the visit it was discussed with the participants how the ¡VAMOS! approach to mining could enable the re-opening of abandoned mines; extensions of open pit mines which are limited by stripping ratio, hydrological or geotechnical problems; and opening of new mines with limited environmental impacts in the EU.



As the world's leading subsea trenching equipment supplier SMD provides unrivalled engineering experience to an emerging industry, having already designed, manufactured and tested submerged mining technology. SMD's mining business stream supplies remotely controlled mining equipment, associated deck or mine site launch and recovery systems (LARS), and control systems for offshore and onshore submerged mineral extraction. SMD's past experience with the development of submerged mining technology was used to initiate discussions on the expected benefits and potentials of the solutions offered by ¡VAMOS!.

Friday 12 June 2015

09.00	Depart from NEIMEE for field excursion Part 3
19.30	Dinner – Centre of Britain, Haltwhistle
23.00	Return to Newcastle

Field excursion part 3: the North Pennine Orefield

Field excursion leader: Brian Young

The Northern Pennine Orefield, centred around the hills and valleys of Alston Moor and Weardale, comprises numerous vein and related deposits hosted in a cyclothemic succession of Carboniferous limestones, sandstones and mudstones. The deposits exhibit many characteristics of the worldwide ‘Mississippi Valley’ type of mineralisation. Since at least the 12th century the area has been a major source of lead and iron ores, though with the peak outputs being recorded during the 18th and 19th centuries. More recently, zinc ores became an important product together with the development of large scale mining for fluorspar, barytes and witherite. The local abundance of the latter mineral and other barium



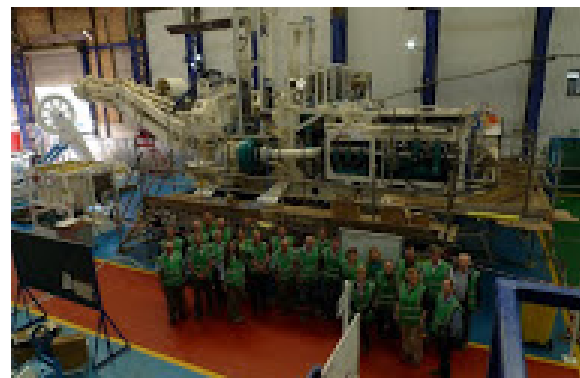
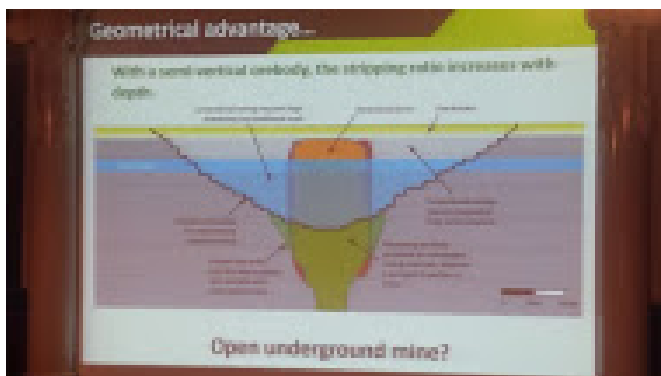
GROVERAKE MINE, ROOKHOPE
The Orefield's largest, and last working fluorspar mine which closed in 1999.

carbonates was a unique feature of the field. During its long mining history the area became an important centre for the origination of many novel ideas and concepts in the understanding of the nature and origins of deposits of this sort. Although commercial mining ended in 1999, the Orefield remains an important focus of research and has recently seen renewed exploration for hitherto undiscovered base metal deposits. In addition to its substantial output of metal ores and industrial minerals, the Orefield has also long been celebrated internationally as the source of some of the finest known specimens of several of its constituent minerals, most notably fluorite, magnificent examples of which are to be seen in most of the world's major collections.

This excursion visited several of the Orefield's classic locations at which numerous key facets of the mineralisation were demonstrated and discussed. Additionally, the day also had focus on some of the environmental legacy issues that remain from centuries of mining and smelting and explored some of the environmental issues that will inevitably accompany any future proposals for a resumption of mining in the area, which is now protected as an Area of Outstanding Natural Beauty.

3.2 Presentations

Stef Kapusniak, Business Development Manager of SMD Ltd., described ¡VAMOS! objectives and ambition, delivering a presentation with a detailed overview of the project in the morning, and guiding a tour to SMD shipyard in the afternoon. In this tour, participants had the opportunity to watch in first-hand the technology and equipment developed by SMD to mine in the ocean floor, at depths that exceed 4,000 meters.



3.3 Press release

The press release (see annex 1) produced right after the workshop was circulated within the EFG network, reaching more than 50,000 geoscientists all over Europe, working in the industry, academia and government.

3.4 List of participants

The workshop was attended by nearly 50 delegates from 18 countries, representing 14 geological societies all over Europe as well as different branches of the mining industry and UK authorities (see the participants list in annex 2).

3.5 Media impact

Pre-event:

Publicity for the workshop was made via GSL¹ (<https://www.geolsoc.org.uk>), EFG² (<http://www.eurogeologists.eu>) and ¡VAMOS! project (<http://vamos-project.eu/>) newsletters and websites.

The registration brochure was disseminated broadly.

Estimated impact: 150.000 viewers.

Post-event:

Dissemination of the workshop press release via the EFG news section.

Estimated impact: 50.000 viewers.

4 Analysis and recommendations

The first ¡VAMOS! Stakeholder workshop was organised to reach out to a broad range of stakeholders and engage in a dialogue regarding ¡VAMOS! objectives. All participants expressed their general interest in the technological approach, and the feedback on the project aims and methodology was very positive. Discussion about the possibilities ¡VAMOS! brings to the reopening of abandoned flooded open pit mines in Europe and its contribution to safeguarding the supply of raw materials to Europe's industry took place. Modern environmental standards and the advantages of ¡VAMOS! technology to meet those standards were also debated.

The specific case of the Northern Pennine Orefield was used as an example, and the contribution of ¡VAMOS! to overcome the difficulties posed by government agencies who run National and Natural Parks and environmental groups to the reopening of mines was discussed.

¹ The Geological Society of London is a not-for-profit organisation, and a registered charity. Its aims are to improve knowledge and understanding of the Earth, to promote Earth science education and awareness, and to promote professional excellence and ethical standards in the work of Earth scientists, for the public good. Founded in 1807, it is the oldest geological society in the world. Today, it is a world-leading communicator of Earth science – through its scholarly publishing, library and information services, cutting-edge scientific conferences, education activities and outreach to the general public. It also provides impartial scientific information and evidence to support policy-making and public debate about the challenges facing humanity. The Society is the UK's professional body for Earth science and has a worldwide membership of over 11,500. More than 2,000 of its members live overseas and over 2,500 are Chartered Geologists or Chartered Scientists – professionals who have demonstrated a high level of education, professional competence in their field and a commitment to professional ethics. The Society is licensed by the European Federation of Geologists to award the title of European Geologist and works with partner bodies in the UK to maintain specialist professional registers.

² The European Federation of Geologists is a non-governmental organization that was established in 1981 and includes today 24 national association members. EFG is a professional organisation whose main aims are to contribute to a safer and more sustainable use of the natural environment, to protect and inform the public and to promote a more responsible exploitation of natural resources. EFG's members are National Associations, NAs, whose principal objectives are based in similar aims. The guidelines to achieve these aims are the promotion of excellence in the application of geology and the creation of public awareness of the importance of geoscience for the society.

The main questions raised by the audience to be considered in the development of the ¡VAMOS! Project and the introduction of this new technology into market can be grouped in three categories:

- 1) The need of meeting rising environmental standards;
- 2) The need of facing social constraints and complicated legal procedures to reopening abandoned mines; and
- 3) Assuming 1) and 2) can be solved, the importance of building equipment that corresponds to modern industry requirements on productivity, energy consumption and market price.

Questions raised during the first workshop revealed that the proposed technology is new and potential stakeholders are not aware of this new approach to mining. The organisation of further stakeholder workshops is thus strongly recommended. Any subsequent workshops shall also consider the outcomes of the market survey planned on ¡VAMOS!'s innovation agenda, allowing the definition of a solid baseline for stakeholders beliefs on reopening mines and exploitation works using submerged equipment. Subject to the availability of project funds, we suggest the organisation of the following types of events and actions:

- Stakeholder events combined with project meetings: for each of the subsequent annual project meetings a small group of stakeholders (representatives of stakeholders) could be invited - as observers. The invitations could reflect the project status of that moment and could target different stakeholder communities accordingly, as identified in D1.6 (1. Mining and mining exploration companies; 2. Investors and R&D funding organizations; 3. Regulators and policy makers; 4. Research centres and academic staff; 5. Environmental NGOs; 6. Associations representing the mining community; 7. The European Commission and its relevant agencies; 8. the general public);
- In-house stakeholder workshops: these meetings could be organised back to back with events where Consortium partners participate, such as trade fairs or conferences, and can aim national impact or sectorial impact. This type of events could be especially relevant for industrial and academic research partners as an action that informs their existing network of professionals, business partners, customers, etc. of the objectives and results of ¡VAMOS!;
- One major international workshop with exclusive focus on industry and prospective customers introducing the ¡VAMOS! approach and technology to its target audience. Such workshop could be organised under WP7, around months 30, when interim results and possibly some prototype equipment are already available. The objective of this event would be providing direct support to commercialisation and the uptake of results;
- Stakeholder session during the Final Meeting. This could target a broader audience during what could be considered a project “Open Day”. The meeting could be combined with technology demonstration, site visit, bilateral meetings on related science and technology (including discussions on follow-up and spin-off projects) and B2B / B2C sessions.

The above proposed Stakeholder engagement actions would need to be aligned with WP1 and/or WP7 and especially D1.6: Dissemination Plan.



Annex 1 - First iVAMOS! Stakeholder Workshop

Press release | 11 June 2015

On 11 June 2015 the iVAMOS! project was presented in Newcastle to an audience interested in low impact, environmentally safe mining techniques. The first iVAMOS! Stakeholder Workshop was organized back-to-back with a workshop organized by the Geological Society of London with the title "Mining in a crowded country". The GSL workshop covered North of England's history and development and its relation with mining, probably dating back to Roman times. Speakers presented future prospects for mining in the region and, because Europe is a heavily populated continent, challenges posed by differing views about land use and the acceptability of mining in the 21st Century.

Stef Kapusniak, Business Development Manager of SMD Ltd., introduced iVAMOS! objectives and ambition, delivering a presentation with a detailed overview of the project in the morning, and guiding a tour to SMD shipyard in the afternoon. In this tour participants had the opportunity to watch in firsthand the technology and equipments developed by SMD to mine in the ocean floor, at depths that exceed 4.000 meters.

Discussion about the possibilities iVAMOS! brings to the reopening of abandoned flooded open pit mines in Europe and its contribution to safeguarding the supply of raw materials to Europe's industry took place. Modern environmental standards and the advantages of iVAMOS! technology to meet those standards were also debated.

About iVAMOS! :

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More information: <http://vamos-project.eu/>

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Annex 2 - EFG 2015: Mining in a Crowded Country

11-14 June 2015

ALL ATTENDEES

Forenames	Surname	Delegate Organisation
Ruth	Allington	GWP Consultants LLP
Jess	Aries	The Geological Society of London (GSL)
Rachel	Benton	Badlands National Park
Nic	Bilham	The Geological Society of London (GSL)
Kelvin	Buchanan	H B Engineering Group
Domenico	Calcaterra	Italian National Council of Geologists (CNG)
Pierre	Christe	Swiss Association of Geologists (CHGEOL)
Martin	Cooke	Newcastle University
Vitor	Correia	Portuguese Association of Geologists (APG)
Nuno	Da Silva	Belgo-Luxembourg Union of Geologists
Jennifer	Davey	Geological Society Publishing House
Christopher	Eccles	The Geological Society of London (GSL)
Andrew	Edwards	The Environment Agency
Isabel	Fernandez	European Federation of Geologists
Marie	Fleming	Institute of Geologists of Ireland (IGI)
Chris	Fraser	Sirius Minerals
Krzysztof	Galos	Polish Association of Mineral Assets Valuers
Manuela	Gruba	Ercosplan
Tamas	Hamor	Hungarian Geological Society (MFT)
Eva	Hartai	Hungarian Geological Society (MFT)
Robert	Hoogendoorn	Royal Geological and Mining Society of the Netherlands (KNGMG)
Markku	Iljina	Finnish Union of Environmental Professionals (YKL)
Jean-Bernard	Joye	Swiss Association of Geologists (CHGEOL)
Stef	Kapusniak	Soil Machine Dynamics Ltd
Joakim	Korshoj	Danish Geological Society
Simon	Leeming	The Coal Authority
David	Manning	University of Newcastle/The Geological Society of London (GSL)
Alessio	Menegatti	Swiss Association of Geologists (CHGEOL)
Catherine	Miller	NEIMME/FWS Consultants
Edmund	Nickless	The Geological Society of London (GSL)
Keith David	Philpott	SRK Consulting
Manuel	Regueiro	Official Spanish Association of Professional Geologists (ICOG)
David John	Richardson	Kier
Jorge	Rodriguez	Ercosplan
Nieves	Sanchez Guitan	Official Spanish Association of Professional Geologists (ICOG)
Panagiotis	Sarantakos	Association of Greek Geologists
Foster	Sawyer	American Institute of Professional Geologists (AIPG)
Gail	Siok	American Institute of Professional Geologists (AIPG)
William	Siok	American Institute of Professional Geologists (AIPG)
Rick	Smith	FWS Consultants
Monica	Sousa	Portuguese Association of Geologists (APG)
Gerard	Stanley	Institute of Geologists of Ireland (IGI)
Anita	Stein	European Federation of Geologists
Peter	Styles	University of Keele
Peter	Thorn	The Coal Authority
Cee	van der Land	Newcastle University
Brian	Young	British Geological Survey
Paul	Younger	University of Glasgow