



AN AUTONOMOUS UNDERWATER EXPLORER FOR FLOODED MINES

UNEXMIN KICK OFF MEETING

■ Miskolc 18 – 19 February 2016



AN AUTONOMOUS UNDERWATER EXPLORER FOR FLOODED MINES

SESSION 1: WELCOME AND OVERVIEW

■ Miskolc, 18 February 2016

TOPICS

ABOUT THE PROJECT: BACKGROUND, CONCEPT AND APPROACH

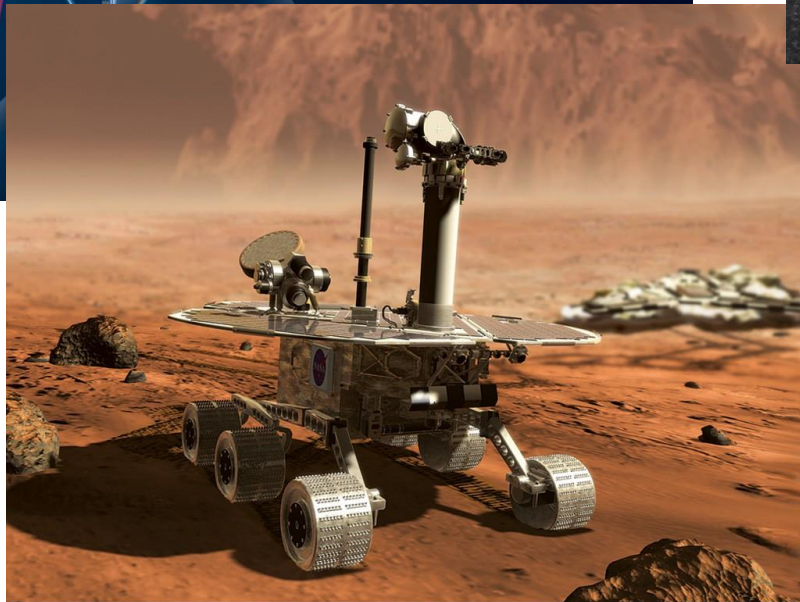
AGENDA OF KICK OFF MEETING

WP9: COORDINATION AND MANAGEMENT

ABOUT THE PROJECT: BACKGROUND, CONCEPT AND APPROACH



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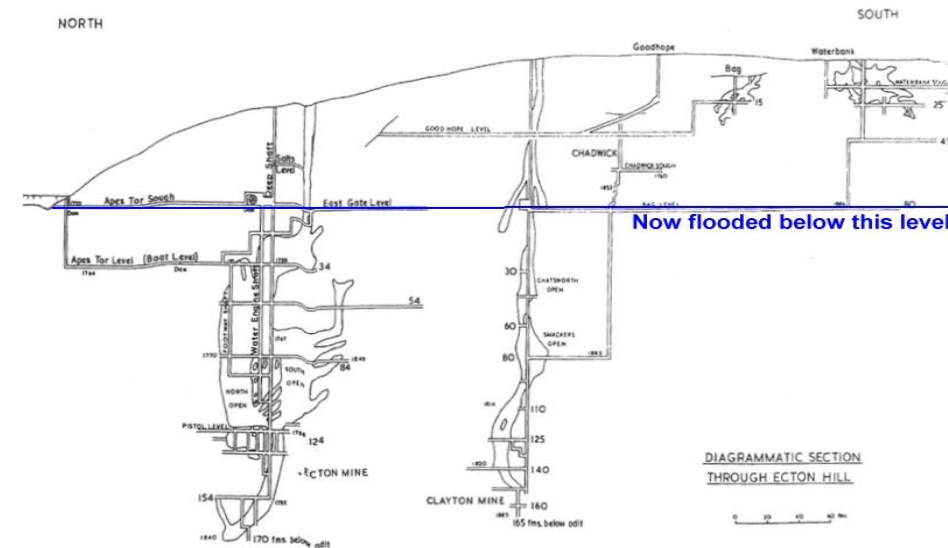
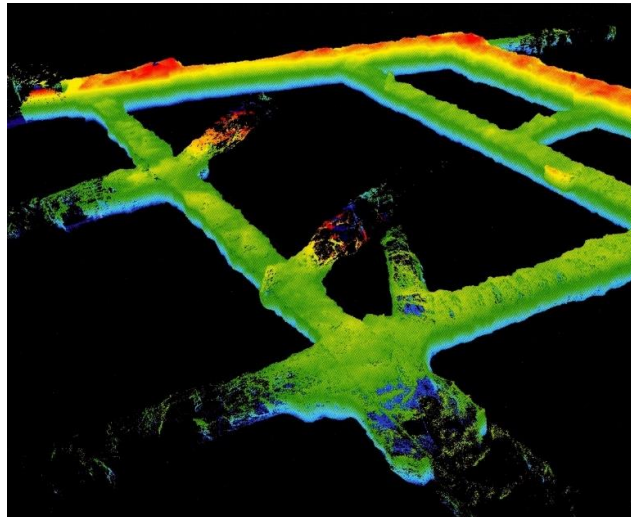


ABOUT THE PROJECT: CONSORTIUM

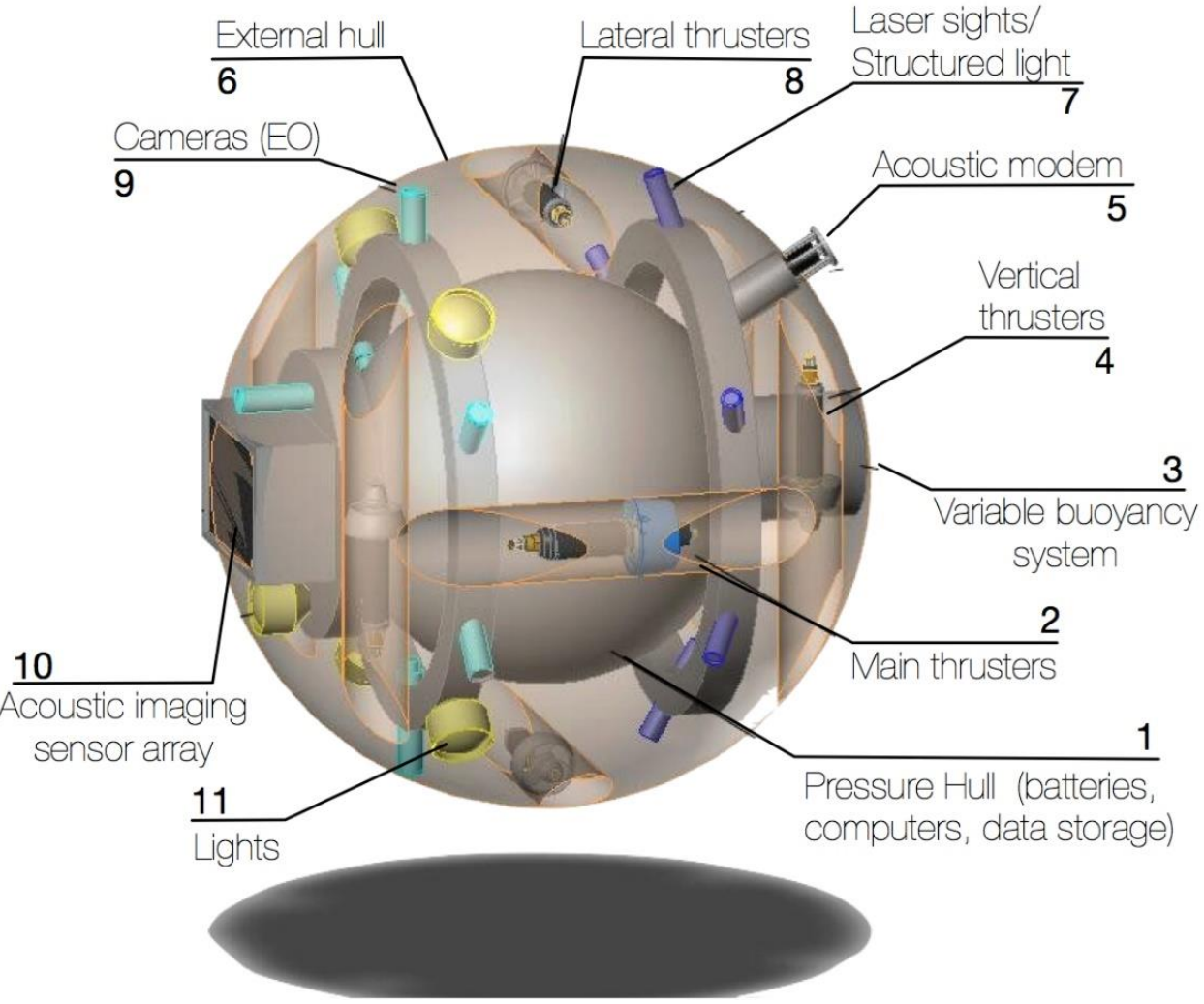
- University Of Miskolc
- Geological Survey Of Slovenia,
- Tampere University Of Technology, Department Of Mechanical Engineering Systems,
- Universidad Politécnica De Madrid, Centre For Robotics And Automation
- La Palma Research Centre For Future Studies
- Nesc Tec – Instituto De Engenharia De Sistemas E Computadores, Tecnologia E Ciência,
- Resources Computing International Ltd
- Geoplano Consultores Sa,
- Ecton Mine Educational Trust
- The European Federation Of Geologists
- Geo-montan Kft
- Empresa De Desenvolvimento Mineiro
- Center Za Upravljanje Z Dediscino Zivega Srebra Idrija

ABOUT THE PROJECT: CONCEPT

- There are of the order of 30,000 closed mine sites in Europe and many of them potentially contain considerable amounts of valuable mineral raw materials,
- The closure of a mine is usually more related to economics and technological challenges than to the actual depletion of mineral resources
- often minerals which were disregarded during the operational life of the mine (such as fluorite in lead/zinc mines)
- These mines are now flooded and the last piece of information of their status and layout is decades or over a hundred years old.



ABOUT



Physical A

- Max op
- Shape: :
- Size: ~ (
- Expecte
- Neutral
- Power c
- Max sp
- Autono
- Thruste

Propulsion:

- one tail thruster (2), plus two thrusters for longitudinal (sway) motion (8) Vertical
- movement (heave): based on buoyancy control (3) and vertical thrusters (4)
- Attitude control (pitch and yaw): pendulum-based (displacement of the centre of mass)



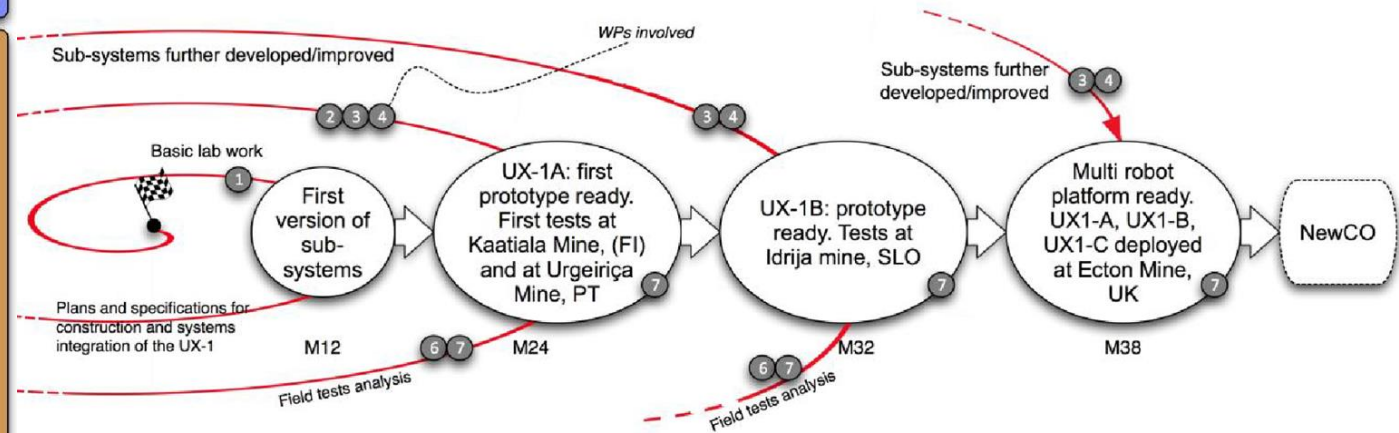
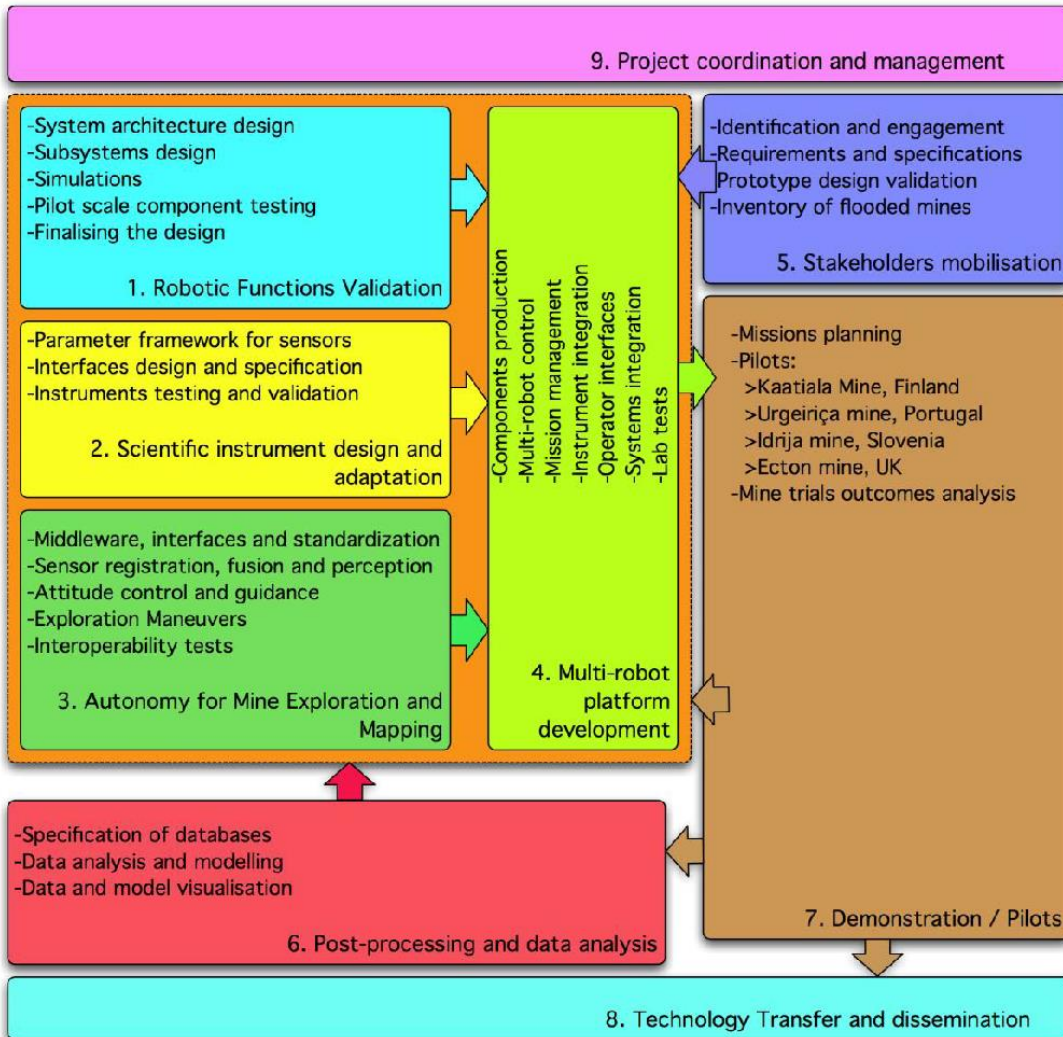
ABOUT THE PROJECT: GOALS

- The project will use cutting edge science and technology from deep sea robotics to develop a *fully autonomous robotic surveying* solution for mapping abandoned and flooded deep mines. *Major technical challenges* are related to the harsh environment, mine depth and the need for autonomous navigation and mapping of semi-structured environments, while at system level the *major focus will be on robustness and dependability*.

Specific goals

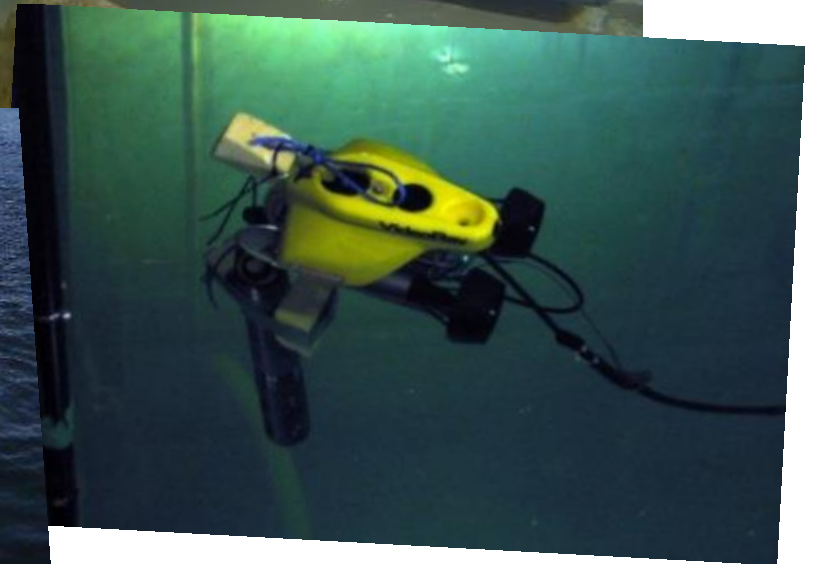
- Design and build a multi-platform robotic Explorer for autonomous 3D mapping of flooded deep mines
- Demonstrate the operation of the prototype at a set of representative pilot sites
- Develop an open-source platform for technology transfer and further development
- Develop a research roadmap in support of further technology development
- Develop commercial services for exploiting the technology

ABOUT THE PROJECT: APPROACH

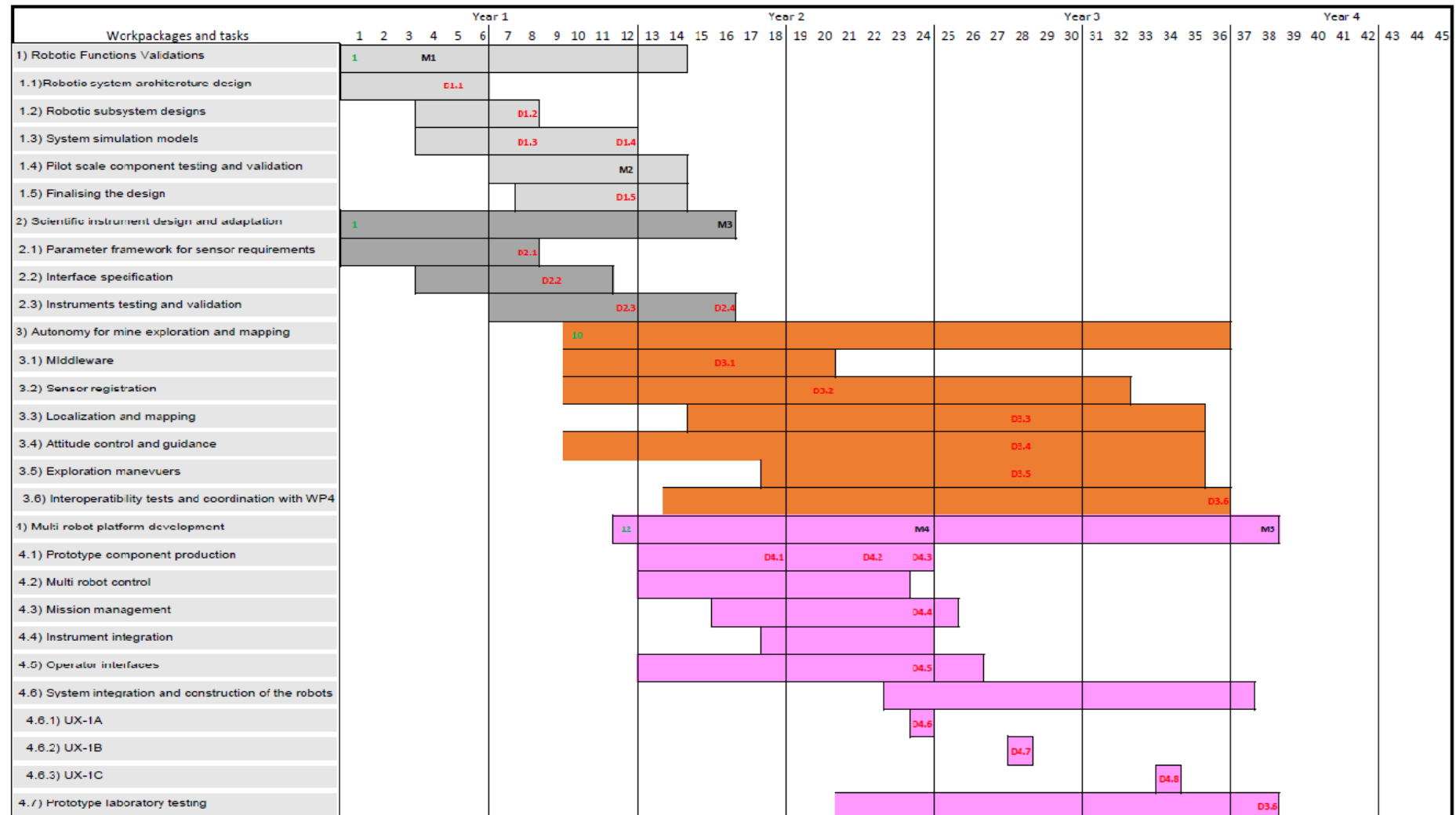


ABOUT THE PROJECT: APPROACH

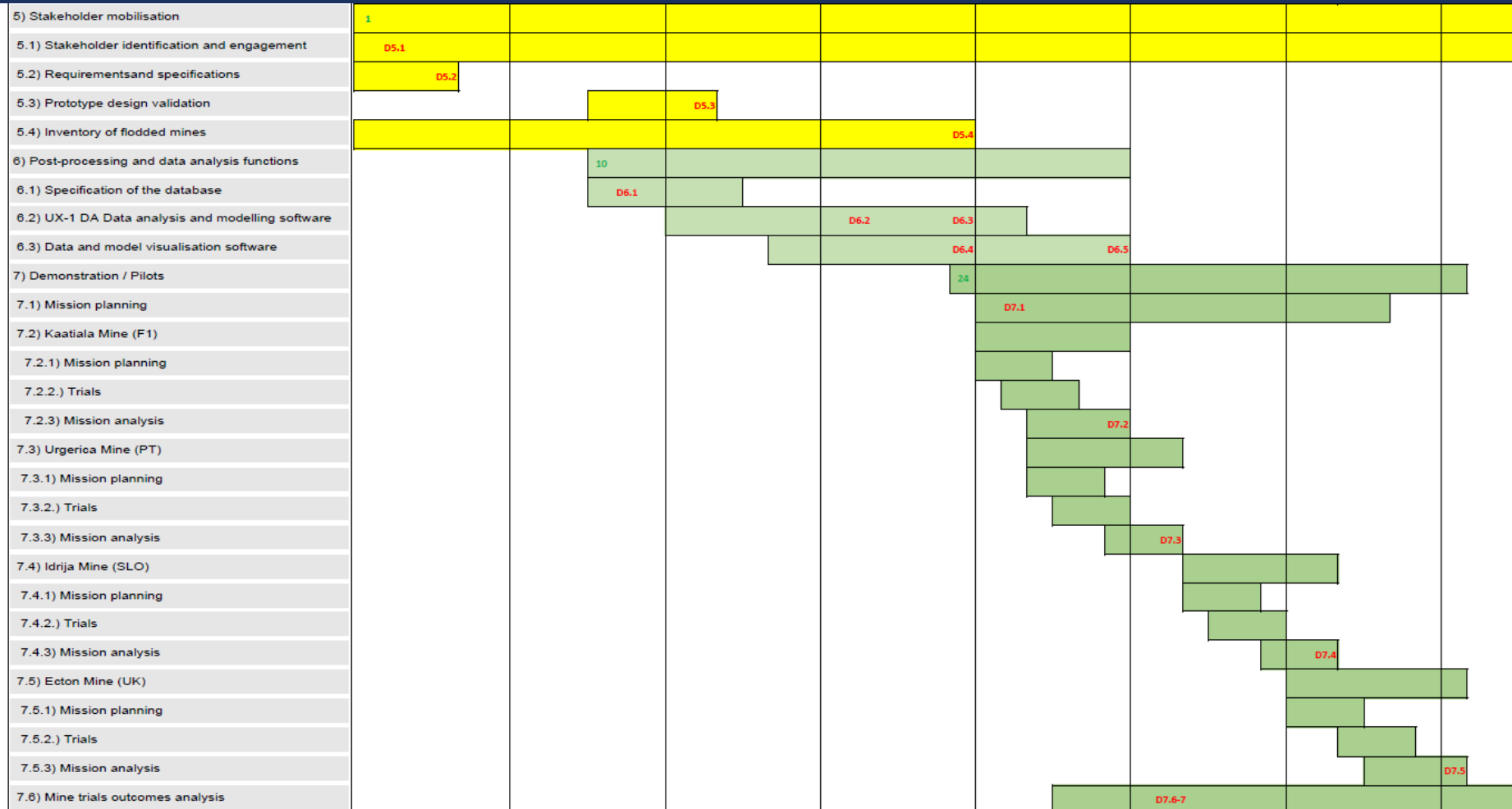
- Cave exploration
- Ambulance
- Monitoring of nuclear facilities
- Monitoring of large diameter pipelines
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-
- Looking ahead



ABOUT THE PROJECT: GANTT



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8) Dissemination	1											
8.1) Dissemination management	D8.3-4											
8.2) Dissemination support services	D8.1		D8.2-6		D8.13-14		D8.7		D8.5		D8.5	
8.3) Leveraging technology transfers and dialogue	D8.8								D8.10			
8.4) Research roadmapping	D8.9								D8.16			
8.5) Business economics and exploration results	D8.11				D8.12				D8.15			
9) Project management	1								M6			
9.1) Project coordination	D9.1		D9.3		D9.5		D9.5		D9.5			
9.2) Project management	ME1	ME2	ME3	ME4	ME5	ME5	ME6	ME7	ME8			
9.3) Risk management and conflict resolution	D9.2											
9.4) Intellectual property rights management	D9.4											

ABOUT THE PROJECT: AGENDA

Day 1, 18 February, 2016			
Time	Session	Structure/ Delivery	
8:45 - 9:00	Registration		
Session 1: Welcome and Overview			
9:00 - 9:50	Welcome and agenda of the meeting including reporting and finances by the coordinator (UNIM) - WP9 structure Introduction of the partners - including competences, references and short explanation how they imagine their participation, roles, tasks and results on each WP and tasks they are involved	Brief opening remarks / presentation Brief words by partners	
9:50 - 10:20	UNEXMIN: as the European Commission sees it (Project Officer)	Presentation/Debrief	
10:20 - 10:35	Coffee		
Session 2: Planning of Workpackage 1 and 8			
10:35 - 12:00	(Separate workshop for WP1, WP8 and other than that WP's - detailed conceptualisation of the work within the WP's, detailed task distribution and timing - WP1 - lead by TUT - WP8 - lead by LPRC	Guided/ Structured workshop	
12:00 - 13:30	Lunch		
Session 3: Planning of Workpackage 2 and 5			
13:30-15:020	Separate workshop for WP2, WP5 and other than that WP's - detailed conceptualisation of the work within the WP's, detailed task distribution and timing - WP2 - lead by UNIM - WP5 - lead by EFG	Guided/ Structured workshop	
15:00 - 15:15	Coffee		
Session 4: Planning the rest of the Workpackages			
15:15 - 17:30	Workshop for WP3, WP4, WP6 and WP7 detailed conceptualisation of the work within the WP's, detailed task distribution and timing	Guided/ Structured workshop small group discussion led by WP leaders	
19:00	Social program and dinner		
Day 2, 19 February, 2016			
Time	Session	Structure/ Delivery	
Session 5: Workpackages Introduction and workplan conclusion			
9:00 - 10:00	WP1 & WP2- introduction and discussion of workpackage implementation (TUT and UNIM task leaders) Methodology, overall task distribution, deadlines, deliverables, especially early deliverables and milestones and communication	Presentation by WP leader/Discussion (20+10 min each)	
10:00 - 10:15	Coffee		
10:15 - 11:15	WP5 & WP8- introduction and discussion of workpackage implementation (EFG and LPRC task leaders) Methodology, overall task distribution, deadlines, deliverables, especially early milestones and communication	Presentation by WP leader/Discussion (20+10 min each)	
	& WP7- introduction and discussion of workpackage implementation UPM, UNIM & WP9 Methodology, overall task distribution, deadlines, deliverables, milestones and communication	Presentation by WP leader/Discussion(15 min each)	
Project Committee Meeting, Deliverables and Ethical Review			
	Deliverables: UNIM website M1 - LPRC UNIM overview of the work has already done, actions to do, missing parts	Presentation/Guided discussion	
Financial issues and questions			
Project closing			
	Project meeting and End-user requirement specification workshop in Finland, UNIM Advisory Panel + The circle of Stakeholders	Guided Discussion/ Debrief	
	UNIM of the coordinator - Travel home	Brief closing remarks	

ABOUT THE PROJECT: WP9 – COORDINATION AND MANAGEMENT

■ GOVERNANCE STRUCTURE

■ The Commission - The Coordinator

- Project Steering Committee

- Management Group

- Advisory Panel



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■ TOOLS

- Meetings and Online Meetings – Contact List

- UNEXMIN Drive and UNEXMIN Groups

- Templates and Helps and Guidelines

- Action Plan

ABOUT THE PROJECT: APPROACH

■ **TASKS:**

- Project Coordination
- Project management
- Risk management and conflict resolution
- Intellectual Property Rights Management

■ **DELIVERABLES and MILESTONES**

- Organisational project chart
- Risk Management Plan
- Data Management Plan
- Innovation Management Plan
- Project reports – Reporting Periods M16, M32 and M45

ABOUT THE PROJECT: WP9 – COORDINATION AND MANAGEMENT

■ Are we ready

