



Memorandum of Understanding
Between
The French Maritime Cluster (CMF)
And
The Deep Sea Mining Alliance (DSMA)
On Industrial, Technological and Scientific Cooperation

The French Maritime Cluster, a non-profit organization incorporated under the Laws of France, whose objective is to gather and promote the French maritime economy, represented by Francis Vallat, its founding President,

And

The Deep Sea Mining Alliance represented by Mr. Leonhard Weixler, President and hereinafter collectively referred to as Parties,

Europe and mainly the industrial stakeholders from France and Germany have a unique and coherent set of resources, skills and expertise concerning seabed and mining operations. Whilst many of these technologies have reached maturity, the necessary research and development still carries a risk; questions about the ecological footprint of underwater techniques must also be assessed, even though they provide a direct answer to several ecological problems arising from uses of land-based technologies. Concrete answers to these questions must be found before industrial development can proceed.

With respect to several EU activities the parties are discussing possible options to join deep sea mining forces of the industrial stakeholders in France and Germany in order to achieve higher impact strength for deep-sea mining in the EU and push for a much more ambitious vision from the EC.

Possible deep-sea mining partners in France and in Germany would be, for example, the members of the French Maritime Cluster and of the DeepSea Mining Alliance. French and German companies could form the core of an obvious network in an internationally-based deep-sea mining strategy.

Whereas:

- The parties have many developments for the exploration and production of deep sea mineral resources in their territorial waters or in the international waters;
- The parties have a vast experience in integrated onshore, offshore and subsea projects in respect of mining, dredging or offshore hydrocarbon fields in its territorial waters and throughout the world;
- The parties possess modern technologies for equipment, vessels, labs, expertise used for such projects;

- The parties are jointly keen in developing a sustainable cooperation in matters of technology and sciences in respect of deep sea mineral resources exploration and exploitation projects in their territorial waters and in the international waters.
- There is a need to assess the nature and scale of impacts of mining and to generate knowledge of deep-sea ecosystems to reduce and mitigate for impacts in a cost-effective and environmentally sensible manner. In addition, there is a need to advise on best environmental technologies the development of deep sea mining. Many deep-sea habitats extend over large areas, but the extent of many individual species and habitat ranges are unknown. Other habitats, such as hydrothermal vents, are highly localized and may be particularly vulnerable to mining impacts. Greater knowledge is needed on the diversity, resilience, species ranges, life cycles and ecosystem functioning of deep-sea fauna.
- Joint activities of the parties should be focused on seafloor massive sulphides (SMS) and manganese nodules

The Parties hereby agree as follows:

Article 1

Subject

The parties consent to develop their cooperation in the fields of deepsea mining to the benefice of both France and Germany, their public bodies, SME and large Industrial companies.

Article 2

Cooperation content

The Cooperation plan will possibly be elaborated in the following fields:

- Joint Industry Projects
- Pilot Mining Tests
- Joint RTD projects
- Joint marketing activities
- Joint Exploration cruises,
- Deposit evaluation,
- Environmental Impact Assessment Study,
- Impact monitoring and remediation,



- Development & Qualification of innovative and sustainable deep- sea technologies and ,
- Technology and Sciences Education and Training.

Article 3

Logistics

The Parties will nominate a Committee to define the agenda and the priorities of the agreed cooperation.

Article 4

Duration of the Memorandum of Understanding

This MOU shall come into force upon signature, and shall remain in force until October 20th, 2017 or when the Parties have signed a further document.

Bremerhaven, October 20th, 2015

Bremerhaven, October 20th, 2015

For the French Maritime Cluster

For the Deep Sea Mining Alliance

Francis Vallat
Founder and Honorary President

Leonhard Weixler
President