



METIS takes off, a disruptive onshore seismic acquisition system

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METIS[®] (Multiphysics Exploration Technology Integrated System) is a disruptive Research project aiming at developing a cost & HSE effective 3D HD geophysical solution.

This solution is meant to unlock exploration acreage in onshore areas difficult to access and image (e.g. foothills). The METIS[®] ethos is to provide the interpreter with a high quality subsurface image, while limiting the number of personnel involved, thus keeping cost and HSE exposure to an acceptable level.

This ambitious objective is achieved thanks to the use of automated solutions (sensors deployment using drones) and innovative logistics means (hybrid airship) in order to operate “from the air” and therefore limit all heavy material transportation on the ground. Not to be outdone is the quality of the geophysical image obtained with the METIS[®] system, which is expected to be of the highest quality thanks to the large number of sensors deployed. The use of innovative real-time processing sequences will also enable to deliver this image very quickly, thus allowing for a very quick interpretation turn-around time and adaptive acquisition scheme.

A first pilot was done in Papua New Guinea end of 2017 where several key technologies have been tested successfully. Around 60 DARTs (Downfall Air Receiver Technology) were dropped using one UAV in the tropical primary rainforest. Following the encouraging results, 2019 will be dedicated to UAS development to implement swarms of at least 6 drones to drop few thousands DARTs (Downfall Air Receiver Technology) as part of our roadmap to the full industrial pilot in 2021. The system will focus on flexibility and scalability with a unique blend of:

- Artificial Intelligence for navigation and safety clearance,
- Modular payload to broaden the missions beyond the Oil and Gas business such as parcel delivery or environment monitoring,
- Scalability with the ambition to fly more than 25 UAVs with real-time adaptation to the surrounding area in full autonomy.

To do so, a dual approach is followed by starting the design and production of the next METIS[®] while engaging the regulators to build confidence and pave the way for future acceptance.

METIS[®] will pioneer the onshore seismic acquisition to the 21st century with a safe and versatile UAS. Combined with its cutting-edge communication capabilities, METIS[®] could also be used for various applications from natural disaster emergency response to large automated logistics in hard-to-reach places.