

GOLD-PAWS

Sustainable Production Process for High-Quality **Gold**-Plated **Wires** for **Antennae**

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Electroplating technology suffers from limited sustainability, due to both its wide-spread reliability wet chemical processes, the use of toxic materials, and high consumptions of energy; at the same time, quality control and thus quality assurance processes leave room for improvement to reach levels that are routine for other parts of the high-tech industries.

To overcome these challenges in the field of electroplated ultra-thin wires, Materia Nova, Luma Metall AB and Ionics Surface Technologies aim to develop a new manufacturing process, using low pressure plasma technologies, namely a combination physical vapor deposition (PVD) and ion beam implantation, to improve the coating performance, and the sustainability of the process, whilst simultaneously introducing a new quality-control methodology. The successful completion of the Gold-PAWS project will result in the first ever reel-to-reel manufacturing process for ultra-thin wires including a PVD deposition process and an ion beam implantation post-treatment. The process will demonstrate its superiority in sustainability, compared to the conventional wet processes, based on defined sustainability criteria and benchmarks, whilst simultaneously improving the quality of the resulting gold-plated wires and the quality control procedures. In addition, the Project will also contribute to the replacement of cyanide based electroplating processes.