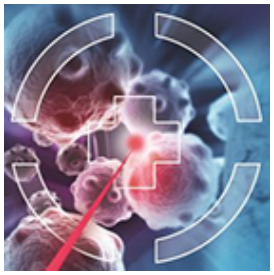

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A collaborative compact linear particle accelerator project for Carbon therapy

Added Value Industrial Engineering Solutions S.L.U. is an international company which provides technology-based services to innovative and challenging projects. Strongly focused on the development of outstanding devices, instruments, mechanisms and structures, their expertise covers design, manufacturing, assembly, tests and supply under ISO 9001 EN 9100, providing customers all the way up from the conceptual design to the turnkey solution. From diagnostics in the accelerators field (emittance meters, water cooled scrapers, compact Diagnostic Boxes, high power collimators and slits, small angle X-ray scattering beamlines) to diagnostics in the Nuclear Fusion area (steady state outer vessel sensors, magnetic loops, fiber optics current sensors, fast ion loss detectors and Low noise TIAs, NBI beamline components$\cdots$). From thrusters and mechanical devices for space for ESA (sampling tool mechanism) and NASA (MEDA MARS rover wind sensors and calibration target) to Spectrograph for large telescopes (MEGARA) or high precision alignment structures (crab cavities). Outstanding performance under operation is demonstrated day by day along the most recognized facilities (i.e. ITER, CERN, ESRF, ELI beamlines, ILL, RAL, NASA, ESA$\cdots$).

AVS is currently leading a consortium of companies in a collaborative project, which aims at developing components and systems that will result in the capability to develop a compact particle accelerator for Carbon therapy.

During the initial phase (2018-2020), the tasks triggering and defining the future accelerator performance and position within the market (analysis, conceptual engineering design, technical requirements and specifications) are being developed. AVS is collaborating with CERN and other institutions in the design and manufacturing of different subsystems, e. g. a fully striped carbon ion C6+ source. Besides, diagnostics instruments for the ion extraction line
such as deflector, beam stopper, degrader are under evaluation. In a subsequent phase (2021-2023), the review of the general engineering, the prototype testing and the manufacturing of the remaining components will take place.
In addition to those activities, AVS'developed a specific product (i.e. beam diagnostic boxes) for proton therapy accelerators with a high degree of market share.

Thus, AVS, as adjunct partner in the OMA project, brings its expertise in the network, proposing to the partner institutions innovative solutions beyond the state of the art, supporting and helping with the advances in the OMA's research projects.

Primary author: BATTAGLIA, Maria Cristina (Centro Nacional de Aceleradores)

Presenter: BATTAGLIA, Maria Cristina (Centro Nacional de Aceleradores)

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