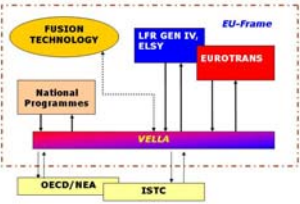


VELLA

Virtual European Lead Laboratory



VELLA IS AN EURATOM FP6 PROJECT WHICH HAS THE AMBITIOUS INTENT TO CREATE A VIRTUAL LABORATORY FOR LEAD TECHNOLOGIES.

THE DRIVING IDEA OF VELLA IS TO HOMOGENIZE THE EUROPEAN RESEARCH AREA IN THE FIELD OF LEAD TECHNOLOGIES FOR NUCLEAR APPLICATIONS IN ORDER TO PRODUCE A COMMON PLATFORM OF WORK WHICH WILL CONTINUE ALSO BEYOND THE INITIATIVE

NETWORKING ACTIVITIES

The Networking Activities (NA) are activities which have as principal objective the creation of a virtual community of researchers, the definition of common standards and protocols for the use of the facilities and the interaction with the other programs and institutions operating in the field

The NA foresee the creation of an interactive website where it is possible to access all the publications related to the project, have direct contact with researchers for further information and visit the "virtual laboratory", the realization of a "dedicated chat line" for discussing among researchers, the edition of a VELLA electronic newsletter reporting the most important news, the organization of dedicated workshops on specific issues related to the HLM technology, the organization of thematic workshops on HLM and 'Good Practices' workshops for young researchers, the set up of an expert group to promote a real integration among the EU activities on HLM already going on within Europe in several fields, etc., to create a real "virtual" community of researchers in the field of HLM technologies for nuclear applications.

- NA1 Management of the Consortium Activities
- NA2 Virtual Community Creation and Results Dissemination
- NA3 Harmonization of Knowledge and Establishment of Good Practices
- NA4 Guidelines & Procedures
- NA5 Collaboration With Other Programs and Future R&D

JOINT RESEARCH ACTIVITIES

Through the JRA is foreseen the development and the justification of the technologies needed for the operation of large facilities for future Gen IV reactors and ADS cooled by HLM, the development of the needed components and instrumentation, the study of the liquid metal thermal-hydraulics and the analysis of the effects of irradiation in presence of LBE, homogenizing and completing the results obtained in the other research programmes related to the HLM technologies for nuclear applications.

JOINT RESEARCH ACTIVITIES (JRA)

JRA1: Lead Technology

- Task 1.1 Oxygen control process
- Task 1.2 Corrosion testing
- Task 1.3 Mechanical properties

JRA2: HLMs Components, Instrumentations Development and System Operation

- Task 2.1 HLM pumps development
 - 2.1.1 Mechanical pumps development,
 - 2.1.2 Mechanical pumps, tests of bearing types; design of a new innovative mechanical pump.
 - 2.1.3 Electromagnetic pumps development
- Task 2.2 Purification Systems
 - 2.2.1 Purification system development and associated standardized procedures
 - 2.2.2 Purification Control
- Task 2.3 ISIR methodology, new developments
- Task 2.4 New instrumentation developments

JRA3: Thermal Hydraulics and Technology Development

- Task 3.1 Forced convective heat transfer from highly heat loaded surfaces
- Task 3.2 Natural and mixed convection in loop systems
- Task 3.3 Characterization of the LBE free surface versus the geometry and the flow rate in the windowless target concept

TRANSNATIONAL ACCESS ACTIVITIES

The Transnational Access (TA) are activities which main objective is to promote the access of researchers, universities and firms to the existing infrastructures and knowledge, in order to increase the competitiveness of the European industry, to train the researchers in using the EU infrastructures and to help the human mobility between and towards the laboratories.

The main outcomes of the TA are both the access to the infrastructures and the Human Mobility, for which every year is published on the VELLA website (www-3i-vella.eu) a call for proposals, soliciting applications from interested candidates

Small laboratories

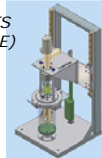
an important action of VELLA consists of grouping the numerous small laboratories spread across the Europe into virtual structures



LECOR & CHEOPE
- ENEA (IT)



LIMETS
- SCK-CEN (BE)



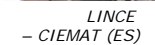
CICALAD & COLIMESTRA
- CEA (FR)



ELEFANT
- FZD (DE)



COLONRI I & II
- NRI (CZ)



LINC
- CIEMAT (ES)



COSTA & CORRIDA
- FZK (DE)



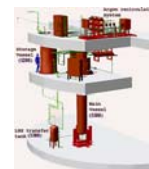
OCEAN & THESIS
- FZK (DE)



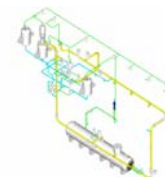
STELLA
- CEA (FR)

Large facilities

The large facilities create the three real labs named as the devices themselves



CIRCE FACILITY
- ENEA (IT)



THEADES LOOP AT KALLA - FZK (DE)



TALL FACILITY
- KTH (SW)

Partner institutions:

ENEA, CEA, CIEMAT, CNR, CNRS, FZK, FZD, IQS, KTH, NRI, PSI, SCK-CEN, IPUL

