

## Technologies related studies for lead alloys by JL Courouau, CEA/DEN/DER/STR

- **Context :**

- ADS studies (transmutation), within international collaborations and 5th European FP (TECLA: technologies for lead alloys, MEGAPIE : Mega Pilot Experiment)
- LFR studies, only through the **WP4 collaborating group with MINATOM**

- **Topics :** chemistry (including radiochemistry) and corrosion

- No specific feed back on dismantling or cleaning operations : hot oil cleaning, acid mixture were applied when necessary

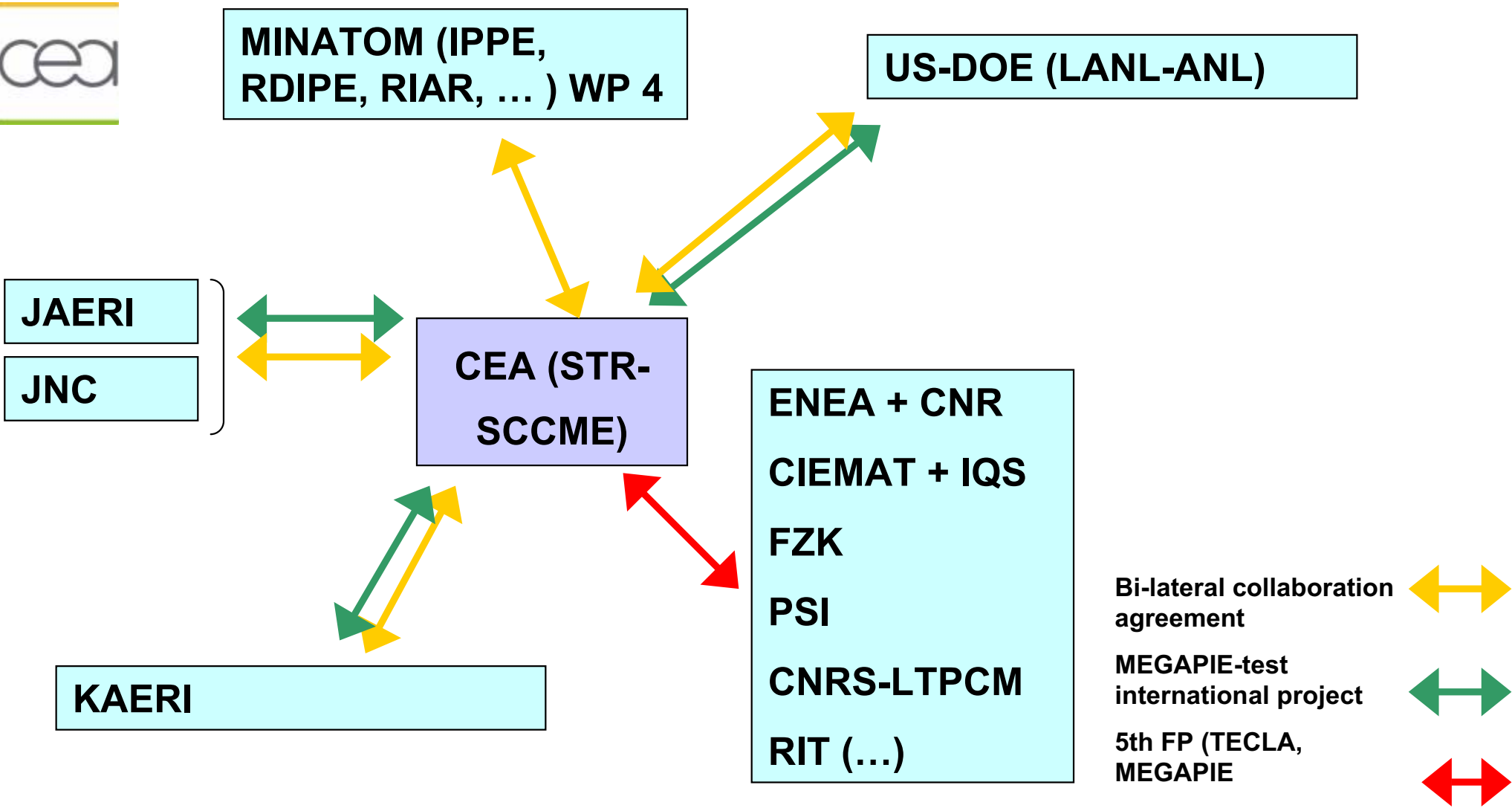
- **Facilities**

- 2 lead-bismuth loops (CICLAD and STELLA), and a number of static devices

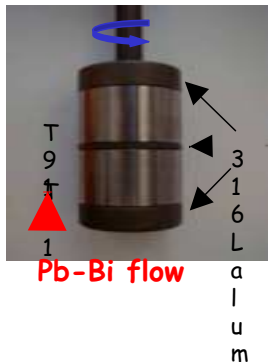
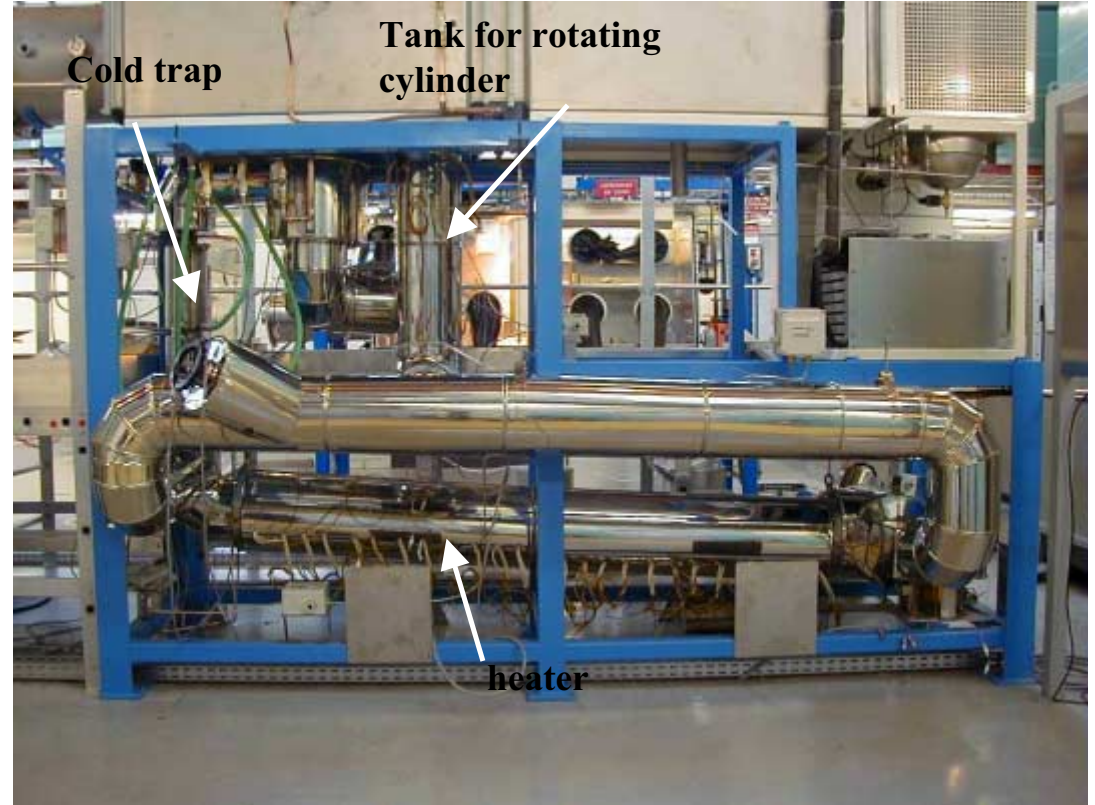
- **Contacts :**

- Saclay - SCCME : Anne Terlain and Fanny Balbaud for the corrosion
- Cadarache – STR : JL. Courouau, for the chemistry control and monitoring

Collaboration framework on lead alloys technology (not exhaustive):



The CICLAD facility : Corrosion Induced by the Circulation of a Lead Alloy



**Rotating cylinder samples**  
**Large oxygen domain ( $10^{-12}$ - $10^{-5}$  % mass.)**  
**Large liquid speed : up to 5 m/s**  
**Efficient control of the chemistry**

# STELLA (Standard TEchnology Loop for Lead Alloys) (max. temperature 550°C, SS316 aluminised, 32 litters, 0.1-1 m<sup>3</sup>/h, $\Delta T = 150^\circ\text{C}$ )

Start-up : Nov. 2002

