

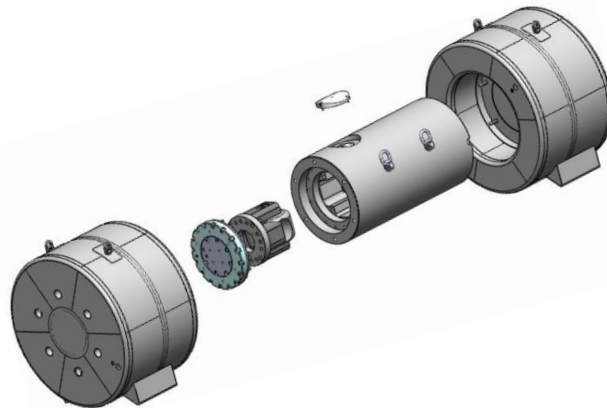


Air Transport of Small Quantities of Irradiated Materials: Flying Pig Concept Update

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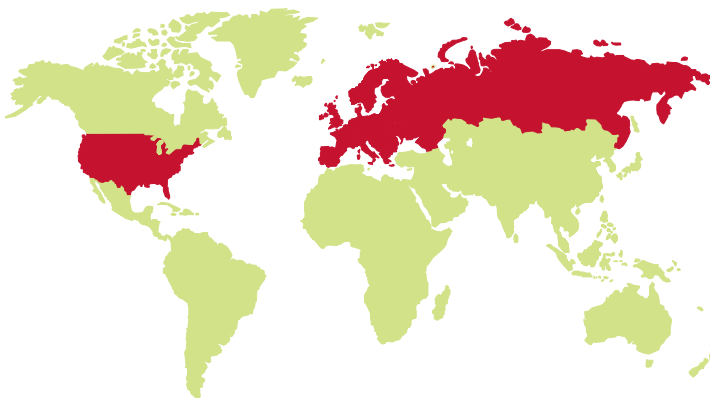
Air Transport of Small Quantities of Irradiated Materials: Flying Pig Concept Update

1. Presentation of project
2. Flying Pig Characteristics
3. Flying Pig Operability
4. Contents Authorized
5. Schedule
6. Conclusion



Presentation of project

- ▶ **Call for proposal by HOTLAB for a small B(U) cask for air shipment**



- ▶ **Cost-effective**
- ▶ **Flexible**
- ▶ **Less red-tape**
- ▶ **Transport small quantities of irradiated material**
- ▶ **Throughout the world**
- ▶ **AREVA TN was selected by HOTLAB**





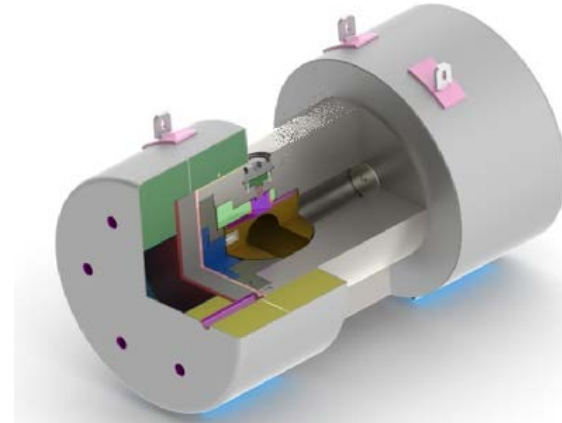
Presentation of project

- ▶ **AREVA TN will propose in its lease :**
 - ▶ **Cask**
 - ▶ **Tools to operate the cask**
 - ▶ **Maintenance**
 - ▶ **Certificate of approval in France, ADR countries, USA (and we are working to accept Japan)**
 - ▶ **Renewal of certificate every 5 years**
- ▶ **AREVA TN is currently:**
 - ▶ **Designing (cask, transport frame, container, toolboxes...)**
 - ▶ **Licensing**
 - **French certification (first safety options were sent)**
 - **European and DOT validations**



Flying Pig Characteristics

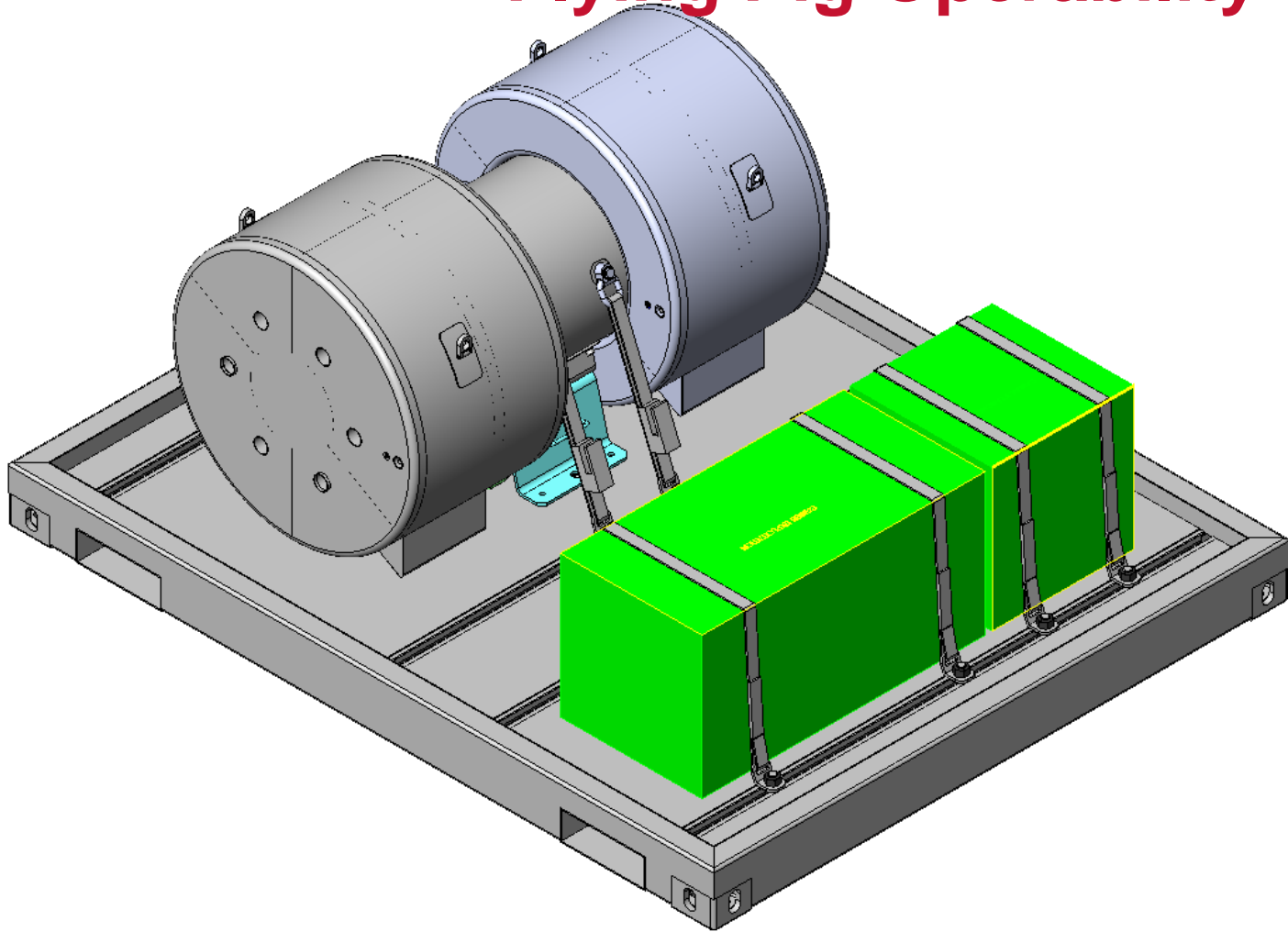
- ✓ B(U)/ B(U) excepted fissile type
- ✓ Transportable by air, road, rail, and sea
- ✓ Maximum heat load: 10 Watts
- ✓ Maximum payload: 10 kg
- ✓ Revolving plug/direct connection to hot cell
- ✓ Load/unload in horizontal or vertical position
- ✓ La Calhene/Getinge CT105 compatible



Approximate weight	2.6 metric tons
Internal cavity Length	300 mm
Internal cavity Diameter	Ø 150 mm
External Length	900 mm
External Diameter	Ø 1500 mm



Flying Pig Operability





Flying Pig Operability





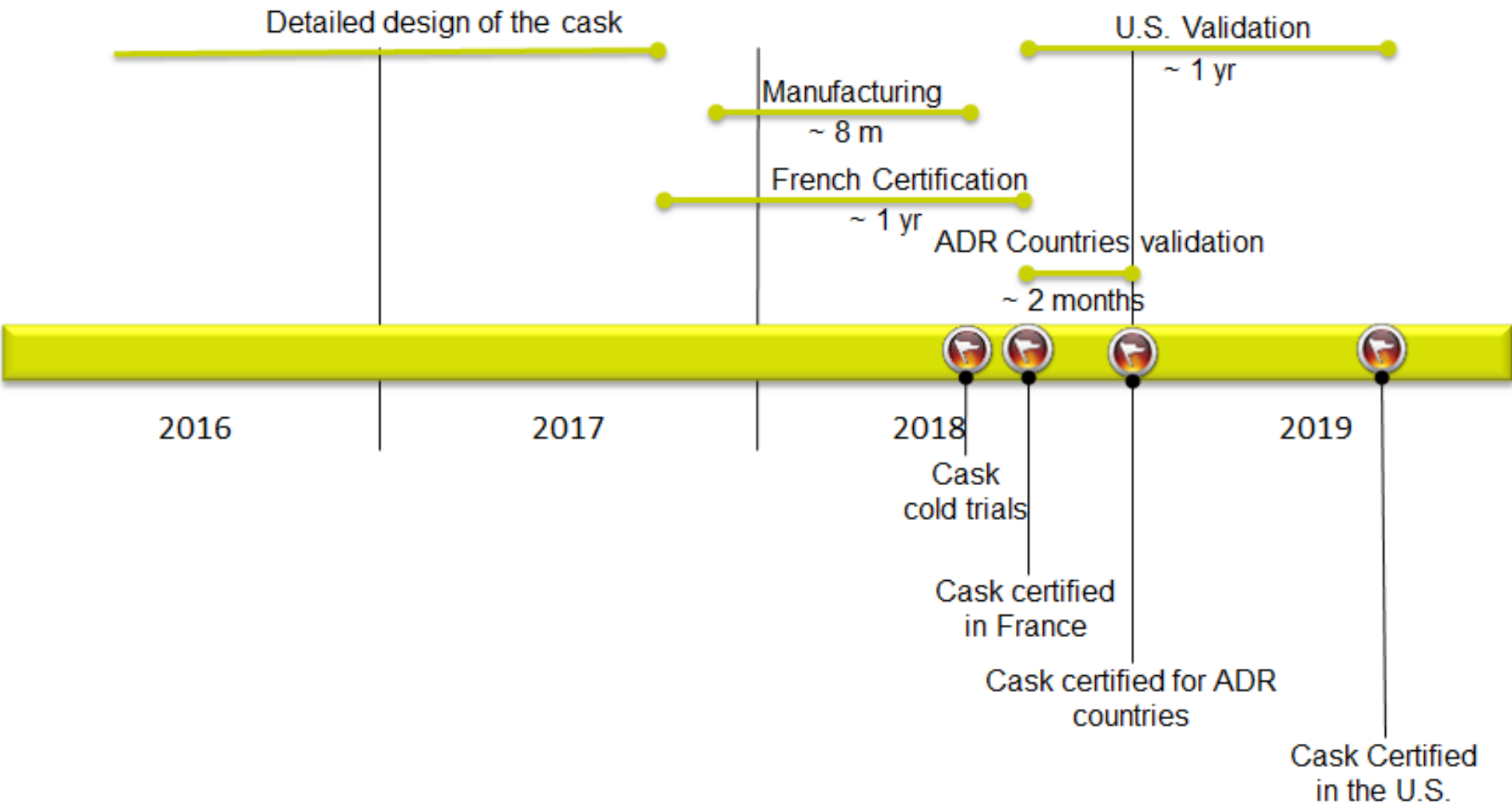
Contents Authorized

- ▶ Large variety of content authorized thanks to an innovative calculation methodology used: an inequality system of loading
- ▶ Various materials: Irradiated pellets, Fuel rod sections, Fuel plate sections, Sources (sealed and non sealed), Metal samples....
- ▶ Various chemical forms :Metal, oxide, carbide, nitride form or mixtures with Si, Yr, Al...





Schedule





Conclusion

- ▶ **Cost-effective & flexible**
- ▶ **Based on the TN®106 concept, an existing and established design**
- ▶ **First cask to be manufactured and licensed by mid 2018**
- ▶ **Next steps, we need your help :**
 - ◆ **Laboratories interface data : crane capacities, tables, docking system...**
 - ◆ **Radiolysis risk : we need to know what resin type you use**
 - ◆ **Content definition : we need content example to check Flying Pig performance**

- ▶ **And then, let the Pig(s) fly!!**

