ThalesAlenia Space
A Thales / Finmeccanica Company

PASSIO CHRISTI
PASSIO HOMINIS
OSTENSIONE
DELLA SINDONE
TORINO 2010

The Reliquary of Conservation of the Holy Shroud and the Contribution of Thales Alenia Space Italia

The Reliquary of conservation of the Holy Shroud and the contribution of Thales Alenia Space Italia

After the fire, on the 12th of April 1997, in the Guarini Chapel close to the Cathedral of Turin where the Shroud was kept, the matter of conservation and security of the Shroud became even more critical. The Committee of Conservation, composed of internationally renowned experts and established by the former Caretaker of the Shroud, Cardinal Saldarini, performed an in-depth study of the complex questions linked to the optimal conditions of conservation and to the need for safely accessing the Shroud during public exhibitions. The first phase of the "project of conservation" resulted in the production of a reliquary for the exhibition of 1998; which would meet the requirements of a short-lived event such as a public exhibition. However, for long-term conservation, a specific reliquary utilizing the most modern technologies of planning and production was needed.

Complete view of the Reliquary
Assembling phase in the Laboratories of Thales Alenia Space Italia of Turin

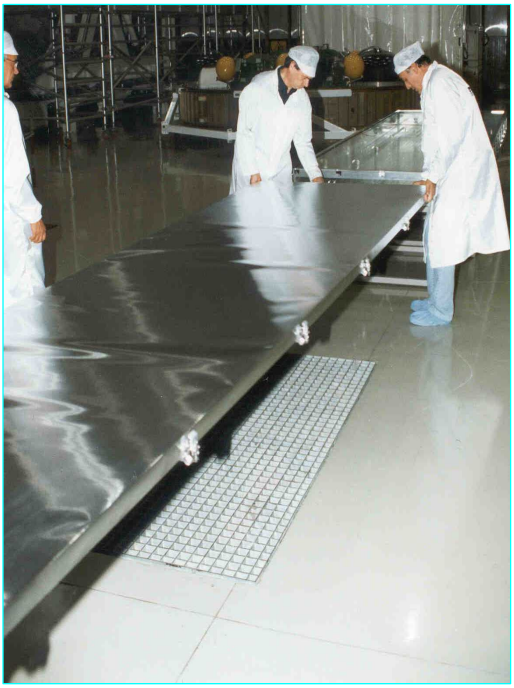
The Diocesian Committee for the Conservation of the Holy Shroud thus turned to Alenia Spazio, currently **Thales Alenia Space Italia**, a leading company in the planning and production of pressurized space modules, for a feasibility study of a system that would meet the requirements imposed by the demand of conservation.
Microtecnica was entrusted with the study for the supporting structure of the Shroud.

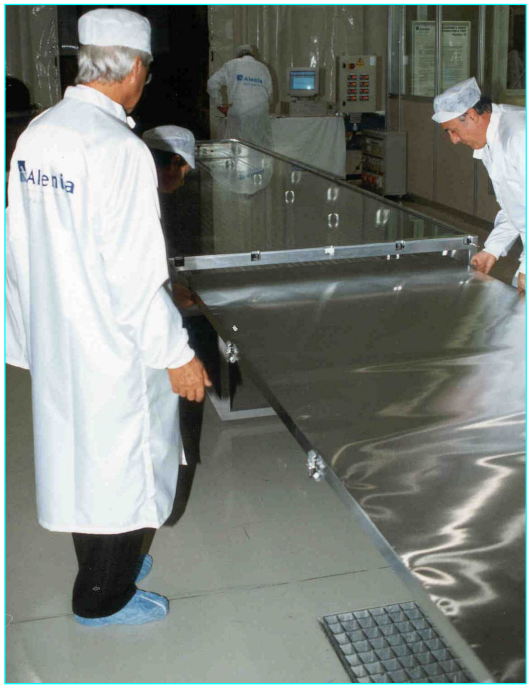
Thales Alenia Space was the logical choice due to its competences acquired in the field of orbital infrastructures. The company is currently the world leader of the production of pressurized modules for the International Space Station. In these thirty years of work in space infrastructures for the Station, Thales Alenia Space has developed, in its Turin laboratories, new technological and innovative solutions designed to resist the arduous conditions that make space uninhabitable. Thus, complex modules, capable of enduring extreme situations were developed. Technology designed to protect man in space was therefore considered capable of preserving even the precious Shroud from any damage.

The study entrusted to Alenia Spazio was followed by the designing and production of the system in which the following companies participated:

- ELIGIO RE FRASCHINI S.r.l. for the mechanical manufacturing of the reliquary
- HIGH VACUUM PROCESS S.r.l. for the equipment handling the fluid
- IDROSAPIENS S.r.l. for the production of expansion joints and bellows
- TECCO S.r.l. for the production of the carriage used for support and movement and of the lifting sling.

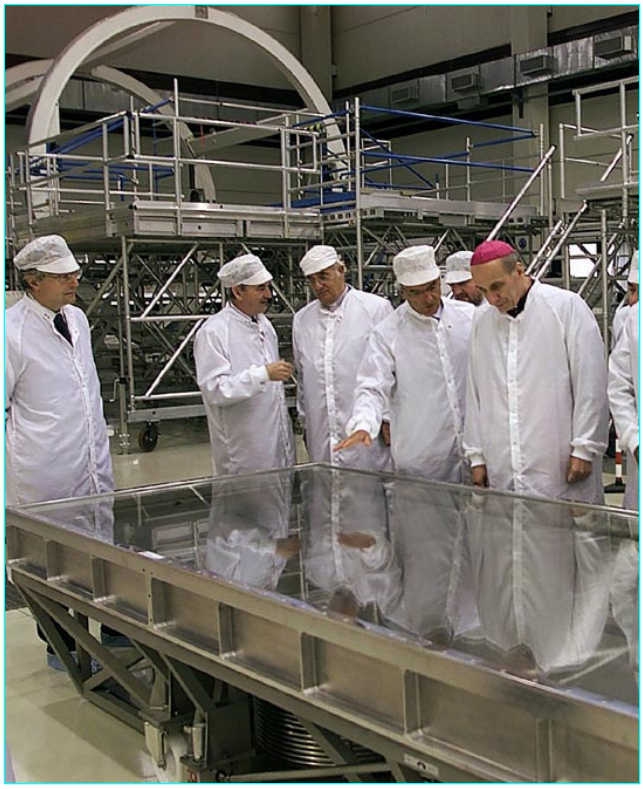
The Container, or Reliquary, contains a sliding and extractable Table, made of aluminium alloy, on which the Shroud is kept fixed in a flat position.
The Container has to maintain a highly efficient airtight capacity which allows the preservation of the wet argon atmosphere for a long time.
Parameters of internal atmosphere: pressure and temperature are kept under constant watch with the quick detection of any occurrence of possible anomalies.
Moreover, the Container has to allow for the periodical or occasional observation of the Shroud without having to remove it from the atmosphere it is in.





The Container, or Reliquary, contains a sliding and extractable Table on which the Shroud is kept fixed in a flat position.

Access panel
Opening and closing tests



Delivery of the RELIQUARY to the Archbishop of Turin
Cardinal Severino Poletto
(November 6th, 2000)