

MATERIALS AND STRUCTURES SYMPOSIUM (C2)
Space Vehicles – Mechanical/Thermal/Fluidic Systems (7)

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ENABLING TECHNOLOGIES FOR HOT STRUCTURES OF NEXT GENERATION RLV'S - THE
ASA PROGRAM SUMMARY

Abstract

The Italian Space Agency begun five years ago a research development program focused on the critical technologies to be investigated in preparation of a new generation of space transportation vehicles able to face manoeuvred re-entry and making wide use of hot-structure based architectures. THALES ALENIA SPACE ITALIA as prime contractor of the program ASA (Advanced Structural Assembly) under ASI contract explored this technological environment, where a team of Italian industries and research entities has developed some original solutions oriented to the realization of a full hot structure made of different materials and technologies, to be used as pathfinder for the key development to be boosted in the coming years. The program arrived to the final on-ground test campaign through several Plasma Wind Tunnel tests at system level, allowing the maturation of peculiar technical solutions and skills, other than giving a considerable number of young graduates the possibility of a unique training-on-the-job. The major results and conclusion coming from the activities performed is hereafter collected, together with the presentation of a further initiative born thanks' to the experience made.