

on station

The Newsletter of the Directorate of Human Spaceflight <http://www.esa.int/spaceflight>



in this issue

foreword

ESTEC Hosts Heads of Agencies 1

columbus

Columbus Completes Development 4

Bernardo Patti

Ready for Orbit 6

Giuseppe Reibaldi

A Testing Time 8

Volker Koehne & Horst Koenig

SOLAR 10

Piero Galeone, Leticia Péres Cuevas & Giacinto Gianfiglio

dms-r

Exercising Control 12

Claus Reimers & Daniel Guyomard

materials technology

IMPRESS 14

David Jarvis & Olivier Minster

reentry technology

Expert Return 16

Marco Caporicci

msm

What is MSM-M? 18

Alan Thirkettle

education

Second Young Engineers' Satellite 21

Alexander van Dijk, Michiel Kruijff,

Erik van der Heide & YES2 Team

ESTEC Hosts ISS Heads of Agencies

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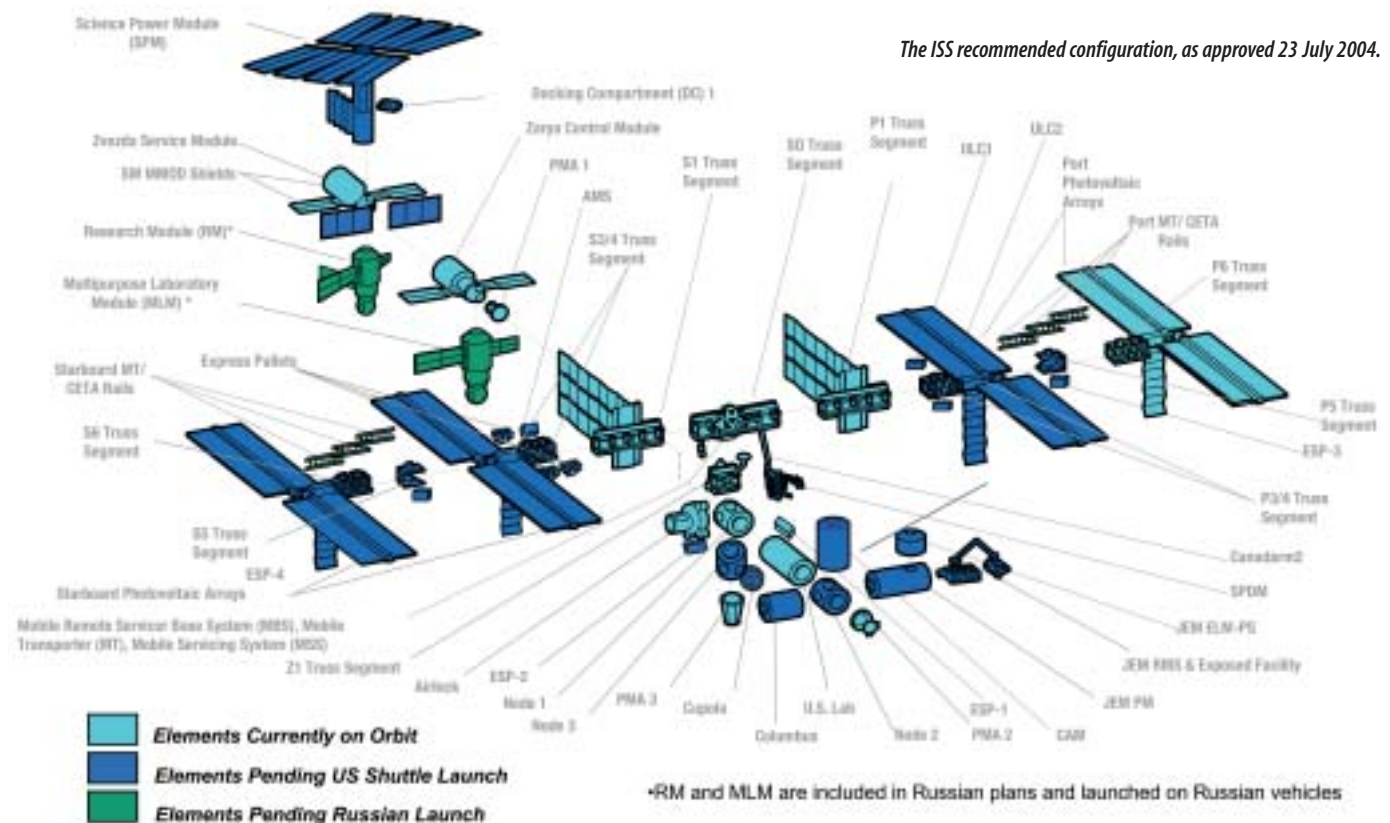
On 23 July, just days before this issue of *On Station* went to press, an ISS Heads of Agencies meeting was held at ESTEC to discuss important Station issues. These included the Space Shuttle's Return to Flight, the overall situation of the Station, the positions of the individual Partner programmes and, finally, the latest report of the Multilateral Control Board (MCB). ESA was represented by Jean-Jacques Dordain, NASA by Sean O'Keefe, the Canadian Space Agency by Marc Garneau, the Russian Federal Space Agency by Anatolii Perminov and Japan's JAXA by Kaoru Mamiya.



The Heads of Agencies received a very thorough briefing from all five ISS Partners. NASA is making a major effort this year – reflected in the budget of around \$4 billion, and approximately the same next year – in getting the Shuttle back into service. Of the 15 actions recommended by the independent *Columbia* investigation team and the 10 self-imposed actions, most are well underway and some have been completed, while the most difficult, on-orbit inspection tools, are still being worked on.

NASA currently plans for the Shuttle to return to flight in March 2005, but with a possibility of a 1-2 week delay. We are very satisfied with this progress, which allows us to continue the planning for our own Station elements.

The Heads of Agencies received an update on ISS operations and were pleased to see that, despite the Station crewing limitation of only two astronauts, there are no major onboard problems. Quite the opposite, in fact: all the critical consumables are in good condition, all critical systems are performing normally and the logistics requirements are being satisfied with two Soyuz and four Progress flights per year. We recently saw an EVA having to be abandoned soon after it began, but it was recently successfully completed, and further spacewalks are planned in August and September. All in all,



the Station is in good shape despite the circumstances under which it is being assembled.

MCB Report

The most important part of the Heads of Agencies meeting was the review and agreement on the MCB report. This summarised the proposed Station final configuration as well as proposing a Program Action Plan (PAP). The PAP was essentially placed on hold following the *Columbia* accident in February 2003. The Heads of Agencies endorsed the Station final configuration and approved the PAP. The diagram above shows this configuration.

The configuration is essentially as planned before the Shuttle tragedy. On the NASA side, the US Habitation Module and the Crew Return Vehicle (CRV) have been deleted. For the Russians, two Soyuz taxi and rescue spacecraft will be attached to the Station. Pleasingly, Russia has reintroduced two modules – the Research Module (RM) and the Multipurpose Laboratory Module (MLM). These additions may provide an opportunity for ESA's European Robotic Arm (ERA) from around 2007. As a consequence of adding these two modules, Russia foresees reducing its 2005 logistics resupply flights by half in order to support

module development. The effect upon ESA's utilisation planning remains to be assessed.

The PAP now has to be executed, requiring concrete plans to be presented to the MCB and the Heads of Agencies in December 2004/January 2005. These plans should detail how each Partner will support development of the agreed configuration, and will entail considerable negotiations between Partners. The MCB will control this process and then reconvene to approve the recommended configuration.

As regards our European effort, ESA's Programme Board of participating Member States last February accepted a revised Refined Scenario #3. This was a follow-up to December 2003's Council decision to add a bridging phase for extending the Columbus schedule, as well as providing additional support for the Automated Transfer Vehicle (ATV) and the interim Station utilisation programme.

Additionally, we in ESA are taking some extra internal measures for identifying and implementing the most prudent industrial contractual approach in order to provide only that industrial support which is absolutely necessary to cover this difficult period.

Columbus Preparation

With respect to our Columbus core element,

we are now in the final stages of assembly at prime contractor EADS-ST in Bremen (D). The infrastructure is ready and individual research facilities (Biolab, Fluid Science Laboratory, European Physiology Modules, and European Drawer Rack) have completed their individual testing as well as the integrated sequence testing with Columbus. The following articles in this issue describe this work. Following this, the first System Validation Test (SVT) has been successful – an end-to-end test of the Columbus infrastructure and its payloads, plus some of the ground elements that monitor and control the flight equipment. Further SVTs will progress towards ultimately checking the end-to-end operations that include the Columbus Control Centre (Oberpfaffenhofen, D), the European User Support and Operations Centres and the NASA Johnson Space Center. Completion of these SVT tests will mark the end of the development of Columbus. Following any updates to the documentation to reflect the ‘as-is’ status, Columbus will then be placed in hibernation in the Bremen integration hall. During hibernation, occasional work may include limited improvements. In any case, Columbus will be ready at short notice to restart ground processing once a firm launch date has been agreed by the ISS Partnership. Based upon this Heads of Agencies meeting, we still expect to see Columbus being launched at the end of 2006 or, at the latest, in early 2007.

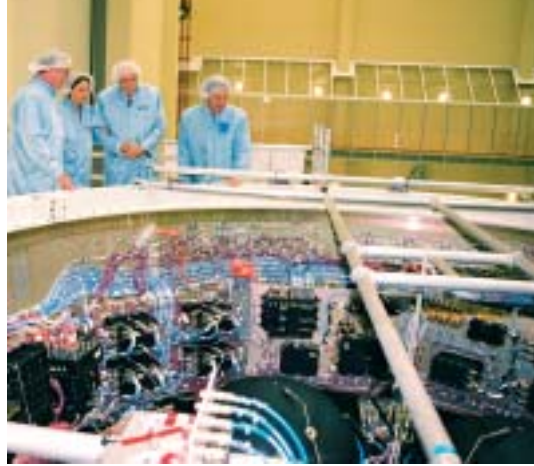
ATV Nearing Flight

On 12 May, we concluded a contract with EADS-ST for the revised ATV development contract; this is now a Firm Fixed Price. The goal of this contract is the launch of the first ATV, ‘Jules Verne’, in October 2005. The ATV production contract and the initial operator contract were signed on 13 July with EADS-ST, including Alenia Spazio as a major partner.

ATV Jules Verne is now in ESTEC and being prepared for environmental testing: thermal, vacuum, electromagnetic and acoustic.

Interim Utilisation Programme

The agreed interim utilisation programme now allows us to bridge the gap between the previously planned Columbus launch date of October 2004 and the current late 2006. For our Users, this means the possibility of using drop towers, parabolic flights, sounding



The Heads of Agencies delegations visit ATV ‘Jules Verne’ in the ESTEC Test Centre.



rockets and Russian Foton flights. The programme also includes onboard use of the ISS via Soyuz, Progress and Shuttle flights to the greatest extent possible. We are also finalising an Italian Soyuz flight for April 2005, and are still negotiating a long-duration flight beginning in October 2005. ■