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on
Environmental Testing for Space Programmes

15-17 June 2004
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Welcoming Address

M. Courtois

Director of Technical and Quality Management and Head of ESTEC site

It is a great pleasure for me to welcome you to ESA's European Space Research and Technology Centre (ESTEC), to this 5th Symposium on Environmental Testing for Space Programmes, and to address this major event which is attended by many distinguished delegates. The previous symposium was held in Liège, Belgium, in June 2001, and there are a number of important issues to address since that successful meeting.

Environmental testing of space programmes raises challenging issues in a number of areas, for example methods, facilities, and instrumentation. Invariably test campaigns have identified important points which could be addressed in a timely fashion by satellite projects, and adequate ground verification is continuing to prove its value in reducing in-orbit failures. Of course we cannot prove everything on the ground, otherwise there would be no need for a space segment!

This conference has been organised with colleagues from the international space community active in this domain, and I am particularly pleased with the large participation also from outside Europe. It confirms that space vehicle test verification provides a stimulus for international cooperation.

I would like to thank the Programme Committee for the excellent work in hosting the 5th Symposium on Environmental Testing for Space Programmes at ESTEC.

I wish you all a pleasant and fruitful conference and I am looking forward to exchanging views, and learning from your valuable experiences.

M. Courtois

Opening Address

Dr. C. Stavrinidis

**Head of the Mechanical Engineering Department
ESA Technical Quality and management Directorate**

Good morning Ladies and Gentlemen,

It is a privilege and honour to address you all, and welcome you as chairman of the Programme Committee.

Verification and testing is an important area of space vehicle development since it draws about 25% of the project resources and spans over 70% of the space vehicle development period.

I believe adequate verification and testing is essential to avoid in-orbit failures which in turn will result in loss of customer confidence, and consequential hesitation in maintaining funding. It is healthy to re-visit technical and management procedures for the development, integration and testing of flight hardware, considering also the need to achieve more with available resources through technology advancements. However, we need to ensure that such changes are made with the full understanding of the potential consequences and associated risk. Recent in-orbit failures of launchers as well as spacecraft clearly show that modifications of the verification approach require special attention. It is therefore appropriate that many papers of this conference address such critical issues.

As mentioned by Mr Courtois, test campaigns have invariably identified important points which could be addressed in a timely way by satellite projects. I am proud to mention that ESTEC is the home of the Large European Test Facilities that you will have the opportunity to visit during the next days. These facilities have contributed significantly to the success of European and international space missions.

With respect to European Space Agency missions, space systems verification covers a wide range of vehicles: the Automated Transfer Vehicle (ATV) for supplying the International Space Station, and Earth observation and scientific spacecraft. Some of these are targeting difficult environments such as Mars, Venus, Mercury or going even closer to the Sun. This trend is forcing and will continue to push our imagination in developing adapted test facilities and new test methods, and also to make maximum use of the lessons learned from previous missions. In this spirit the conference includes sessions dedicated to test campaigns for space exploration missions, test effectiveness, and special test facilities and methods.

I would like to thank the organisation committee and particularly Mr Vessaz and Mr Brunner and also Mr Jamar (who unfortunately is not here today because of back problems) for their excellent work in preparing this event, and Margreet van der Plas and her colleagues for the excellent local arrangements. I hope that this symposium will not only be a busy one, but also stimulating. It certainly provides an occasion to meet old friends and make new ones, and to relax during the social events that your committee has organised.

I wish you all a very successful and enjoyable symposium.

Dr. C. Stavrinidis