



## HEADS OF AGREEMENT

between

**Centro Italiano Ricerche Aerospaziali (Italian Aerospace Research Center)  
Via Maiorise  
81043 Capua  
Italy**

- hereinafter referred to as "CIRA" –

and

**The University of Queensland ABN 63 942 912 684, a body corporate constituted under The University of Queensland Act 1998 (Qld) of Brisbane, Queensland 4072, Australia.**

- hereinafter referred to as "UQ" –

- collectively referred to as "the Parties" -

### **Background**

Italy and Australia are two of the leading countries in the international hypersonics community. Both are expert in hypersonic technology research and development, and both are actively pursuing hypersonic flight programmes. These include, in Europe, the Italian USV test bed and the ESA EXPERT and IXV re-entry experiments, and in Australia, the HyShot and HIFIRE hypersonics flight experiment programmes. Considerable synergy exists between our two countries in this field, and this opens up enormous opportunity for mutually beneficial collaboration.

The University of Queensland Centre for Hypersonics, established jointly in 1997 between the Departments of Mechanical Engineering and Physics, is internationally recognised as a world leader in hypersonic aerothermodynamics and hypersonic airbreathing propulsion (scramjet) research. Based on its world class experimental facilities – the T4 reflected shock tunnel and the superorbital expansion tubes X1, X2 and X3 – and a team of over 30 faculty staff, postdoctoral fellows, graduate students and technical staff, the Centre has

active research programs in scramjet propulsion, hypersonic aerodynamics, superorbital and radiating flows, optical diagnostics, computational fluid dynamics and facility development. It is involved in scramjet flight testing through the HyShot and HIFiRE programs, and these have included the historic milestone of the first demonstration of in-flight pure supersonic combustion with the Mach 7.6 HyShot II scramjet flight experiment at Woomera in 2002.

The Centro Italiano Ricerche Aerospaziali (CIRA) was established in 1984 as a mixed public-private company whose shareholders include the Italian Space Agency, National Research Council, Regione Campania and aerospace industries. CIRA is committed by Italian Government to perform PRORA (Italian Aerospace Research Program) under the control of Ministry of Research. CIRA's commitments include: (i) design, manage and operate the world-class facilities, (ii) build up and integrate competences and expertise, (iii) define, manage and execute R&D projects, (iv) contribute to scientists and technicians training. Main assets and competences in the Space Sector are the 70MW "SCIROCCO" and the 2MW "GHIBLI" Plasma Wind Tunnels for high enthalpy ground testing, the Advanced Reentry USV (Unmanned Space Vehicles) including a family of flying test beds form transonic to hypersonic research, numerical aerothermodynamics, UHTC-based hot structures, diagnostics for both on-ground and in-flight testing.

Through entry into this Agreement the Parties record their mutual intent to engage in collaborations, identifying fields of expertise and interest so as to provide for their future engagement. A framework is established for their on-going collaboration.

The Parties therefore agree as follows:

#### **Article 1 - Purpose**

This Agreement shall provide the legal and organisational framework for the development of a mutually beneficial cooperation in hypersonics and propulsion relating to the future development of vehicles for access to and return from space, as well as hypersonic civil transport.

#### **Article 2 - Aims of the cooperation**

The Parties wish to develop close working collaborations through combining resources in experimental and computational fluid dynamics, material and structures and diagnostics over all areas of hypersonic research and development with special emphasis on applying our high enthalpy on-ground and in-flight facilities for fundamental physics research. It is anticipated that mutually beneficial collaborations will advance fundamental research in the field of hypersonics.

Specific possibilities for collaboration are many, but could include:

- allocation of CIRA aerothermodynamics and high temperature ceramic winglet experiments on one or more UQ-led HIFiRE flights
- investigation of UQ high temperature composite materials with embedded sensors, also in view of possible common health monitoring and management developments, for both plasma wind tunnel and hypersonic flight experiments
- joint developments of advanced laser-based and emission spectroscopy diagnostics for either on-ground high enthalpy and in-flight experiments

### Article 3 - Forms of cooperation

1. Cooperation under this agreement and within the spheres of responsibility of the Parties may take the following forms:
  - a) Planning and executing of joint research projects
  - b) Realisation of scientific exchange programs and training of personnel
  - c) Subject to applicable export regulations and obligations of confidentiality to third parties, exchange of equipment, documentation, data, results of experiments scientific information
  - d) Organisation of symposia and scientific workshops
  - e) Incorporation of the other partner in already planned or ongoing projects.

Other forms of cooperation may be agreed by the Parties.

2. The activities of cooperation foreseen shall reflect the interest of both Parties in accordance to their resources and financial planning.

### Article 4 - Implementing regulations

1. All notices and information under this Agreement will be sent by mail or by facsimile or in writing to:

Centro Italiano Ricerche Aerospaziali

*Technical and administrative notices*

Attention:

Dr Gennaro Russo  
CIRA, Space Systems Unit  
Via Maiorise - 81043 Capua, Italy

Phone No.: +39-0823-62 3334 / 3042  
Fax No.: +39-0823-62 3335  
E-mail: [g.russo@cira.it](mailto:g.russo@cira.it)

*Legal notices*

Attention:

Dr Monica Menzani  
CIRA, Commercial Unit  
Via Maiorise - 81043 Capua, Italy

Phone No.: +39-0823-62 3599  
Fax No.: +39-0823-62 3439  
E-mail: [m.menzani@cira.it](mailto:m.menzani@cira.it)

The University of Queensland

*Technical and administrative notices*

Attention:

Prof Russell Boyce  
The University of Queensland,  
Brisbane QLD 4072, Australia

Phone No.: + 61 7 336 53851  
Fax No.: + 61 7 336 54799  
E-mail: [russell.boyce@uq.edu.au](mailto:russell.boyce@uq.edu.au)

*Legal notices*

Attention:

The Director, Research and Research  
Training Division  
The University of Queensland  
Brisbane QLD 4072

Phone No.: + 61 7 3365 3559  
Fax No.: + 61 7 3365 8383

2. Specific research activities and projects shall be agreed upon in separate agreements that will address the following elements:
  - Project Title;

- Project Duration;
- Identification of third party involvement;
- Requirements to access Pre-Existing Intellectual Property/Confidential Information;
- Resource requirements including Key Personnel and Equipment;
- Research Funding (where relevant)

#### **Article 5 - Financing**

1. This agreement is not an authorization to proceed on any effort, nor it is a commitment of any funds.
2. Each Party shall bear the costs of discharging its respective responsibilities under this Agreement, including travel and subsistence of each Party's personnel and transportation of its own equipment and associated documentation.
3. Cooperation on the basis of this Agreement shall not involve the exchange of funds unless otherwise mutually agreed by the Parties.
4. Fulfilment of the tasks pursuant to this Agreement shall depend on the funds available to the Parties in accordance with respective financing procedures that may include funding from a third party funding agency.

#### **Article 6 - Terms and Conditions of Proprietary Information Disclosure**

1. Each Party will protect and preserve the Proprietary Information disclosed by the other in connection with this agreement. "Proprietary Information" used herein means any information which is disclosed by one Party to the other in accordance with this agreement, provided that, when disclosed, such information is in written or other permanent form and is identified as proprietary by the disclosing Party by clear and conspicuous markings.
2. The receiving Party will protect the Proprietary Information from unauthorized disclosure and use. The receiving Party shall limit access to the Proprietary Information to those of its employees with a need-to-know and shall oblige them to observe secrecy about the Proprietary Information and shall preserve all Proprietary Information received hereunder in confidence.
3. The restrictions with respect to any Proprietary Information set forth above shall not be applicable if the receiving Party can prove that such Proprietary Information:
  - a) has come into the public domain prior to the disclosure thereof by the disclosing Party through no wrongful act of the receiving Party; or
  - b) is already known to or has been lawfully received by the receiving Party without restrictions; or
  - c) is approved for release or use by written authorization of the disclosing Party; or has been developed by the receiving Party independent of the disclosing Party.
6. Should any information be disclosed to the receiving Party's subcontractor(s) under the authorisation of the disclosing Party, the Receiving Party shall cause its subcontractor(s) receiving the information to comply with the restrictions and requirements stated herein.
7. Nothing in this clause shall restrict the right of either Party to disclose this agreement, or any provision thereof, to any appropriate government authority which requests disclosure pursuant to applicable law.

8. Proprietary Information shall be transmitted between the Parties through the designated representatives.

#### **Article 7 - Publication**

1. Each Party has the right to publish data and information it generates. The publishing Party will inform the other Party of this publication.
2. No Party has the right to publish information or data being generated by the other Party without the prior consent of the latter.
3. Results generated in common will be published by both Parties in common. The Parties will agree on the content of such publication. The agreement can only be withheld for serious reasons. The agreement is deemed to be given if the other Party does not declare its opposition to the publication four weeks after the draft version has been received by such Party.

#### **Article 8 - Settlement of disputes**

If disputes arise concerning the interpretation and implementation of this agreement the Parties will immediately hold consultations at management level and make every effort to reach a consensus.

#### **Article 9 - Miscellaneous Provisions**

1. This agreement is not intended to constitute, create, give effect to, or otherwise recognise a joint venture, partnership, or formal business entity of any kind. The rights and obligations of the Parties under this agreement are limited to those expressly set forth herein.
2. Performance by the Parties under this agreement is conditioned upon and made subject to the respective national laws of the Parties, including any required licenses and approvals.
3. The rights and obligations of the Parties under this Agreement are limited to those expressly set forth herein.
4. No provision in this Agreement will be construed as providing for the sharing of profits or losses arising out of the efforts of the Parties or a Party.
5. Performance by the Parties under this Agreement is expressly conditioned upon and made subject to the laws of the Parties' respective governments, including any required licenses and approvals.
6. Should any provision of this Agreement be or become invalid, this shall not affect the remaining provisions of the agreement. The invalid provision shall be replaced by a provision which comes closest to the intentions of the Parties when entering into the agreement.
7. Terms of specific cooperation shall be further considered and agreed upon in writing by the Parties prior to any initiation of any particular activity. Any specific program will be subject to mutual consent, availability of funds and approval of both parties.
8. The Parties agree that other than (Article 6) this Heads of Agreement is not a formal legal agreement giving rise to any legal relationship, rights, duties or consequences, but if only a definite expression and record of purpose of the Parties to which the Parties are bound in honour only.

## Article 10 - Entry into force, duration and termination

1. This agreement shall enter into force on the date of its signature and shall remain in force for an initial period of five years. It is automatically extended for successive periods of three year. Each Party may terminate the agreement upon six months written notice to the other Party.
2. This agreement may be modified and amended by mutual written agreement of the Parties.
3. After termination of this agreement its provisions shall remain valid for all projects not yet concluded in accordance with the relevant separate Agreement. Termination of this Agreement shall not release the Parties from the financial and other obligations they may have assumed under any separate Agreement.

Signed in Brisbane on Friday 29 May 2009, by:

**Centro Italiano Ricerche  
Aerospaziali**

Via Maiorise  
Capua – 81043  
Italy



*Gennaro Russo,  
Head, Space Systems Unit*

**The University of Queensland**

Brisbane  
Queensland 4072  
Australia



*Professor Max Lu  
Pro Vice Chancellor (Research  
Linkages)*