

MOM Astri General Board

14-11-2017 13h30 at ArianeGroup Bulding Paris

Participants (in person or by phone):

ASTRI Executive Group

Jean-Jacques DORDAIN
Marcello ONOFRI
Jean-Claude VANNIER;
Giuseppe MORSILLO;

AIRBUS

Bernard ANDRAU, bernard.andrau@airbus.com
Erwan VERNON

ArianeGroup (AG) and RUAG

REICHSTADT, Sebastien; + colleague
GOTZIG, Ulrich;
HACHELEF, Nacim;
COLLANGE Clotilde
FROEBEL, Ludger

OHB

PANDER Sigrid

TAS

VALORGE Christophe

TELESPAZIO

BRANCATI Marco

Universities

Montpellier, jean-patrick.respaut@umontpellier.fr;
Sapienza Rome, paolo.gaudenzi@uniroma1.it;
VKI, Herman Deconinck;
EPFL, Richard Muriel, muriel.richard@epfl.ch
UP-Madrid, Gustavo Alonso
Imperial College, a.knoll@imperial.ac.uk
Montpellier, jean-patrick.respaut@umontpellier.fr
CNAM, Francesco Grasso
Stuttgart, Stefanos Fasoulas, fasoulas@irs-stuttgart.de
Leicester, Barstow, Martin A., martin.barstow@leicester.ac.uk

Agenda:

1. Status of Industrial proposals in more detail
2. Problems related to the participation of the Universities
3. Problems related to the participation of the students

Topic 1 - STATUS of the INDUSTRIAL PROPOSAL

First issue addressed is the *status of the different Projects* presented by the industry partners, organized in four Groups, which have had specific meetings or teleconf before the present meeting

WorkingGroup #1 – ArianeGroup (AG) and RUAG

The three Industrial proposals have been presented with more detail and discussed (see attachments).

- a) **Hydraulic Test and Coding**, with a detailed presentation by Sebastien REICHSTADT
- b) **Green Propulsion**, with a detailed presentation by Ulrich GOTZIG – Universities interested EPFL, VKI, Sapienza
- c) **Cubesat Mission IOD** proposed by AG and RUAG, with a detailed presentation by Nacim HACHELEF – Universities interested Montpellier, VKI, Sapienza, KTH, EPFL, Leicester

After discussion it has been decided to put on stand-by the project on *Hydraulic test*, which need a quite complex background.

WorkingGroup #2 Projects by AIRBUS

- a) **Contamination management for exploration missions** – julien.eck@airbus.com – Universities interested KTH, UPM
- b) **Genetic additive manufacturing** – delphine.carponcin@airbus.com – Universities interested Sapienza, KTH

After discussion, it has been decided to put on stand-by the project on *Contamination Management*

WorkingGroup #3 Projects by TAS and TELESPAZIO

- a. **TAS: space tug system studies** – Xavier Roser, xavier.rosier@thalesalieniaspace.com - Universities interested VKI
- b. **TAS: end-to-end mission simulators and demonstrators**
Gerald Garcia, gerald.garcia@thalesalieniaspace.com - Universities interested CNAM, EPFL, Sapienza, UPM (tbc)
- c. **Telespazio: System architecture design** –
Maria Cristina Lupi, mariacristina.lupi@telespazio.com - Universities interested CNAM, EPFL, Sapienza, UPM (tbc)

After discussion, it has been decided to put on stand-by the project on *Space tug* and to ask to the proponents to *combine the projects b) and c)* and present their synthesis as soon as possible.

WorkingGroup #4 – Projects by AVIO and OHB

- a. Vega in orbit services** – paolo.bellomi@avio.it - Universities interested Sapienza, Stuttgart, EPFL, CNAM, VKI
- b. Micro Moon Lander** - sigrid.pander@ohb.de - Universities interested VKI, IRS, KTH, UPM, Univ Luxemburg

The final synthesis is reported at the end of this document.

Planning of the activity

- The Call by the industries should be issued at beginning of the year. Problems can be foreseen because of the large activity typically existing on January. Possible deadline could be on February.
- After discussion the most effective organization to the activity should be done in two phases divided by an intermediate milestone after six months. Indeed, the first phase can be covered by fellowships by industries, the second by contracts directly by industries or through universities.

FINAL CONFIRMATION of this organization will be decided on the next ASTRI General Meeting on 12 December at Paris (AG Building)

ACTION Before the 12 December meeting:

- Industry will provide their Call for Proposal draft (including call, amp, SOW)
- Universities interested to each specific project should inform the ASTRI Executive on their decision

4. Participation of the universities

In order to have a well-organized participation for each project the participating universities should indicate a lead university coordinating the activities.

ACTIONS for the next meeting on 12 December:

- The above indication should be communicated in the next meeting.
- Universities will confirm their participation, indicating that they will find students for the teams
- Universities will confirm to provide (remote) tutoring of their students during the 12 month's

5. Participation of the students

Contracts.

In some countries, national rules exist that do not allow to award contracts to students after graduation. Possible alternative models could foresee to enroll graduate participants in the EU Partners (universities or centers) which offer Master after Master courses.

Other models to comply with academia rules of master degree regulations can be based on two phase contracts: for the first six months *Fellowship*; for the following 12 months *Contracts* by Industry or through the above university partners.

This model can be facilitated by an organization of the activity based on two phases, as above suggested: Phase 1 of 6 months with financial milestone, that permits to the industry to have the needed knowledge for deciding for phase 2 covered by an industry contract.

Action for the next meeting:

- A) provide input of student contract rules and regulations by university regarding any national restrictions relevant for payments to students
- B) investigate industry rules of the internal alignment with HR/legal

3. Selection of students

Selection criteria of students proposed by KTH and other participant have been discussed

- European students
- Performance
- Competence / Domains

4. Preparation of the Call for Proposals

- Call for proposal procedure

5. Necessary elements of a "legal" framework to execute the project

- Action: Project agreement draft to be proposed -> until end of Nov 2017

Industries will prepare a draft dealing with IPR, publications, and other practical issues that have to be arranged in a call

KTH contribution to the Proposed application and selection procedure

Based on the specific agreements for each project proposal, KTH will through the web site of KTH Space Center announce to KTH students in their last year that they can apply to specific ASTRI projects. The students shall write a short motivation how they qualify for each of the task-specific ASTRI positions they apply to.

Eligibility criteria: the student must have:

1. an EU citizenship.
2. completed all courses from the first year of the master programme.

Ranking criteria:

- Non-weighted average grade from KTH master studies. The non-weighted average grade from the first year's master studies is computed using the following grade conversion: A =5.0, B =4.5, C =4.0, D = 3.5 and E = 3.0. The average grades from the Bachelor degree does not count in the ranking to give a fair comparison between students.
- The applicant shall include documented experience from larger teamwork projects, like REXUS experiments and student satellite projects, and other relevant work experience.

A first evaluation of the applicants will result in a short list of students, who will be called for an interview (with representatives from KTH and, if required, from the companies or other involved universities).

KTH provides to the companies and universities involved in each project a summary of the selected student qualifications and a short comment why they were selected among the applicants.

EPFL CONTRIBUTION

1) Timing

EPFL students start their Master projects either mid-February or mid-September of each year. When done in industry, these master theses can last 6 months. According to the schedule, the student groups would start in April/May, which is already a good way into the 6 months. Do you also have similar schedule matching issues in your universities? Or with other universities? Any solution foreseen?

Also, the students are having their exams in January, so the moment for writing the proposal to the industries is not optimum. Do you also have similar issues?

2) Types of contracts

After their master thesis, the students are engineers. And at EPFL, the master thesis' IP belongs to the Lab (1/3), EPFL (1/3) and the student (1/3). Am checking internally how we will handle this in the case of ASTRI. Do you have similar problems coming from other universities?

ArianeGroup, FROEBEL contribution

ASTRI PROGRAM – ARIANEGROUP RULES

- Contracts / Specific Agreement
- no special rules for contracts/employment for the students
- compliance with security (access to site etc)
- IPR and confidentiality
- project to be part of running / planned RT project – no separate project to be placed.

ASTRI PROGRAM – ARIANEGROUP STUDENT CONTRACTS / COSTS

- Employment of up to 5 students of 3 different universities for 18-month period will be divided in

- 6 month of internship contract
- 12 months based on a limited contract base – to be in CTO organization

Costs

- Employee cost and additional costs such as labcost, office space and supervision to be covered within the RT project by industry

Location

- Depending on subject students need to be at site of industry ASTRI PROGRAM – ARIANEGROUP

ASSESSMENT/STEERING

- Call for proposal to be provided by Industry / RT project manager
- Assessment of Student proposal by Industry Experts and HR, Security including CV of students
- Industry site to be fixed due to simplify access regulation
- Steering of project
- ArianeGroup steering committee for project maturation
- Steering committee contribution by HR to monitor personal development of students during course of project

PROPOSED TOPICS STATUS: 15/11/2017

SEVEN PROJECT PROPOSALS ARE SELECTED

Topic	Type	Company	University
1 Moon lander study	Mission	OHB	VKI, KTH, IRS, UPM, Univ. Luxemburg
2 Extended services of VEGA (focus on student compliance)	Mission	AVIO	VKI, Sapienza, KTH, IRS, UPM (tbc)
3 Hydraulic test/code validation of propulsion system	Technology	ArianeGroup	VKI, CNAM, Sapienza, KTH
4 Low cost green propulsion system	Technology	ArianeGroup	EPFL, VKI, Sapienza
5 Cubesat Mission for IOD/IOV of subsystems	Mission	RUAG/ArianeGroup	Montpellier, VKI, Sapienza, KTH, EPFL, Leicester
6 Space tug study (focus on one application)	Mission	TAS	Sapienza, VKI, EPFL, UPM ???
7+8 End-to-End simulator/demonstrator JOINT WITH System architecture design	System	TAS/Telespazio	CNAM, EPFL, Sapienza, UPM (tbc)
9 Contamination analysis of space missions	System	Airbus DS	KTH, UPM ...
10 Genetic Additive Manufacturing	Technology	Airbus DS	Sapienza, KTH, EPFL

IN YELLOW PROJECTS ON HOLD or TO BE COMBINED