

Adria Space Conference

October 4, 2019

Ruder Bošković Institute, Zagreb

Ovaj dokument rezultat je panel diskusije na temu „Male zemlje u svemirskoj eri“, motivirane brzim razvojem istraživanja svemira, iskorištavajući koristi od njega za dobrobit čovječanstva i buduću prisutnost ljudi u njemu. Male bi zemlje također trebale pronaći svoju ulogu u ovom nastojanju, ali u konkurenciji s velikim konglomeratima pitanje je KAKO?

Uvod

Stabilno i prosperitetno društvo mora biti kreativno u znanosti i tehnologiji i biti globalno konkurentno. Dva faktora koja određuju uspjeh jesu kreativno obrazovani članovi zajednice i vodstvo u novim idejama. Stoga je za malu zemlju, s dovoljno obrazovanim stanovništvom, od najveće važnosti utvrditi trendove na polju znanosti i tehnologije i usmjeriti njihove razvojne napore u tom pravcu. Istraživanje i razvoj u svemirskim aktivnostima pružaju mogućnostima malih zemalja da sudjeluju kao aktivne članice. To prije svega zahtijeva definiranje strateškog smjera razvoja u području zrakoplovne industrije visoke tehnologije, osnovne znanosti i razvoja, kao i aktivnosti u području svemirske medicine, svemirskog prava i svemirskog turizma.

Preporuke

Bitna osobina svemirskih programa je interdisciplinarno i prekrivanje odgovornosti nekoliko ministarstava. Stoga je osnovni korak ka započinjanju Svemirskog programa uspostava Svemirske agencije financiranjem ministarstava Znanosti, Prometa, Gospodarstva (gdje je tehnologija ugrađena) i Obrane. Nacionalna svemirska agencija trebala bi idealno pokriti sve sektore Svemirskog programa, sa stručnjacima za svoja područja. Nastavak uspostavljanja Svemirske agencije jest uspostavljanje Nacionalne svemirske strategije koja ima dva glavna segmenta

1. Nacionalni svemirski program (istraživanje, tehnologija i primjene)
2. Međunarodni kontakti: ESA, EU, bilateralna suradnja

Oba ova segmenta čine osnovu za pristupanje članstvu u Europskoj svemirskoj agenciji. Svemirska strategija trebala bi obuhvatiti dugoročne i kratkoročne ciljeve razvoja i definirati prioritetna područja.

Put za punopravno članstvo ESA-e prvo je potpisati Okvirni program, a zatim postati država suradnik i time se pridružiti programu PECS (Plan za Europske države suradnike). Povelja PECS koja traje pet godina omogućit će državi da razvije svoju svemirsku industriju uz potporu ESA-e. Sljedeći je korak pridruženo članstvo ESA-e i na kraju punopravno članstvo ESA-e. Nacionalna svemirska agencija predstavlja zemlju u Vijeću i Programskim odborima ESA-e. Također savjetuje vladu o razinama opredijeljenosti prema neobaveznim programima ESA-e u skladu sa Svemirskom strategijom. Za podršku

stvaranju svemirskih start-up tvrtki preporučljivo je osnovati ESA Poslovni inkubacijski centar (ESA-BIC).

Paralelno s tim, trebao bi postojati Nacionalni svemirski program za pripremu industrije i akademske zajednice za konkurentno okruženje ugovora ESA-e i EZ-a i omogućiti plodnu dvostranu suradnju.

Kao članica Europske unije zemlja također sudjeluje u “downstream” svemirskom programu EU koji provodi Europska komisija. Primjeri su satelitska navigacija (EGNOS i Galileo), promatranje Zemlje (Copernic), Space Situational Awareness (SSA) i program GOVSATCOM. Za korištenje Public Regulated Service ministarstava unutarnjih poslova i obrane Galileo trebalo bi uspostaviti nadležno PRS tijelo (Competent PRS Authority - CPA).

This document is results of panel discussion on the topic “Small Countries in Space Era”, motivated by the rapidly evolving development in Space exploration, harnessing the benefits from it for the wellbeing of humanity and future presence of humans there. Small countries should also find their role in this endeavor but in competition with large conglomerates the question is HOW?

Preamble

A stable and prosperous society needs to be creative in science and technology, and to be globally competitive. Two factors that determine success are creatively educated members of the community and leadership in new ideas. For a small country, with a reasonably educated population, it is therefore of utmost importance to determine trends in the field of science and technology and to focus their development efforts in this direction. Research and development in Space activities offers opportunities to small countries to participate as an active member. This primarily requires defining strategic direction of development in the field of aerospace high technology industries, basic science and development as well as activities in the field of space medicine, space law and space tourism.

Recommendations

The essential trait of Space programs is interdisciplinary and cutting across the responsibilities of several ministries. Therefore, the basic step towards commencing a Space program is setting up a Space Agency by the funding ministries of Science, Transport, Economy (where technology is incorporated) and Defence. The National Space Agency should ideally cover all sectors of Space program, with experts in their fields. The follow up of establishing Space Agency is to set up a National Space Strategy that has two principal segments

1. National Space Program (Research, Technology and Applications)
2. International contacts: ESA, EU, bilateral cooperation

Both these segments form the basis for accession to the membership of European Space Agency. The Space Strategy should encompass the long term and short-term development objectives and define the areas of priority.

The path to becoming a full member of ESA is to first sign a Framework Programme and then to become a co-operating state and thereby join the PECS (Plan for European Cooperating States) programme. The PECS Charter, which lasts for five years, shall enable the country to develop its space industry with ESA's support. The next step is Associate Membership of ESA and lastly, Full Membership of ESA. The National Space Agency represents the country in the ESA council and programme boards. It also advises the government on levels of commitment in the optional programmes of ESA in line with the space strategy. To support the creation of space start-up companies it is advisable to set up an ESA Business Incubation Centre (ESA-BIC).

In parallel, there should be a national space programme to prepare industry and academia for the competitive environment of ESA and EC contracts and to enable fruitful bi-lateral collaborations.

As a member of the European Union, the country also participates in the down-stream space programme of the EU, which is implemented by the European Commission. Examples are Satellite Navigation (EGNOS and Galileo), Earth Observation (Copernicus), Space Situational Awareness (SSA) and the GOVSATCOM Programme. To utilize the Public Regulated Service of Galileo Ministries of Interior and Defence should set up a Competent PRS Authority (CPA).

Prof. Dr. Slobodan Danko Bosanac



President

Adriatic Aerospace Association

The signatories to the document are:

Petr Bares, President, Czech Space Alliance

Prof. Dr. Sc. Slobodan Danko Bosanac, President, Adriatic Aerospace Association

Mag. Dr. Andreas Geisler, Appointed Head of the FFG Aeronautics and Space Agency

Prof. Dr. Tomaž Rodič, Director, Slovenian Centre for Space Sciences and Technologies

Prof. Dr. Carsten Scharlemann, Head of Department, Aerospace Engineering, University of Applied Sciences Wiener Neustadt

Prof. Heinz Stoewer, Founder of Space Associates GmbH

Dr. Sc. Hrvoje Zorc, Adriatic Aerospace Association

U Zagrebu, 13. Listopada 2019