Demonstrátor 2019

Získejte 50.000 eur



Technologické centrum AV ČR Ve Struhách 27 28. 3. 2019 14:00 – 16:00

Registrace: http://geform.tc.cz/seminar_demonstrator_2019 >>









ESA SPACE SOLUTIONS DOWN TO EARTH

Ing. Pavel Habarta, DiS.
ESA Technology Transfer Broker



Získejte jako třetí v ČR až 50.000 EUR pro uvedení kosmické technologie do pozemního využití

AGENDA

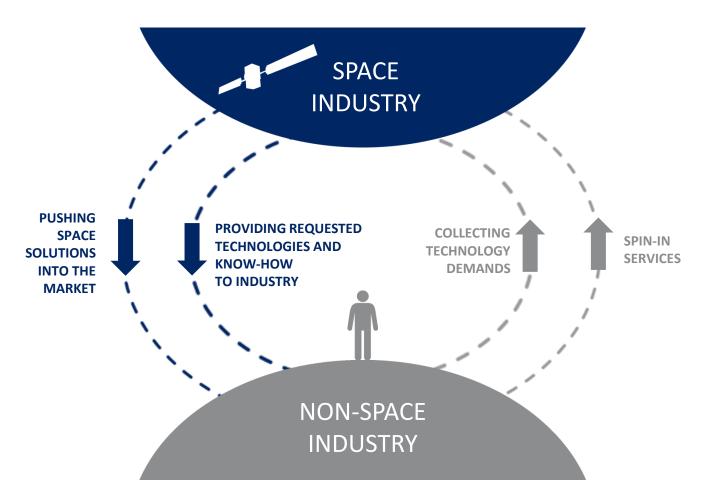
- ESA Technology Transfer Broker
- ESA BIC Prague
- Speed dating
- Success stories
- Demonstrator Competition 2019
- ESA EMITS







BROKER ROLE





BROKER ROLE

Technology Needs - Form (V.2015-2-28)

Title	A clear title that conveys the nature o	fthe technology sought					
Mandatory							
1-255 characters							
Technology	Be aware to that a search may be con	ducted using keywords alone					
Categories							
Mandatory, select							
TTN	Unique identifier						
Reference No							
Assigned by Prime							
Date of Submi	ssion of the Request:						
Deadline to su	bmit Responses:						
Broker Compa	ny Namor	Country					
broker Compa	ny Name.	Country					
Broker Lead M	Broker Lead Manager Name: Telephone: E-mail						

Technology Description Template (v.2018-03-23)

	The title of the offer should be clear and meaningful for persons who are not experts. Readers should
:	easily be able to find out if the Technology Offer is interesting for them.
atory	
characters	

Keywords	Please fill in keywords which will
Mandatory	
1-255 characters	

- . Boxes marked in blue will be published on ESA online market place. (spacesolutions.esa.int)
- Boxes marked in grey are mandatory, confidential and for internal use only.
 The Form should be filled in in English.
- Text in blue was added to support filling in the Form.
- Brokers are requested to select technology & market keywords on the spacesolutions esa.int website

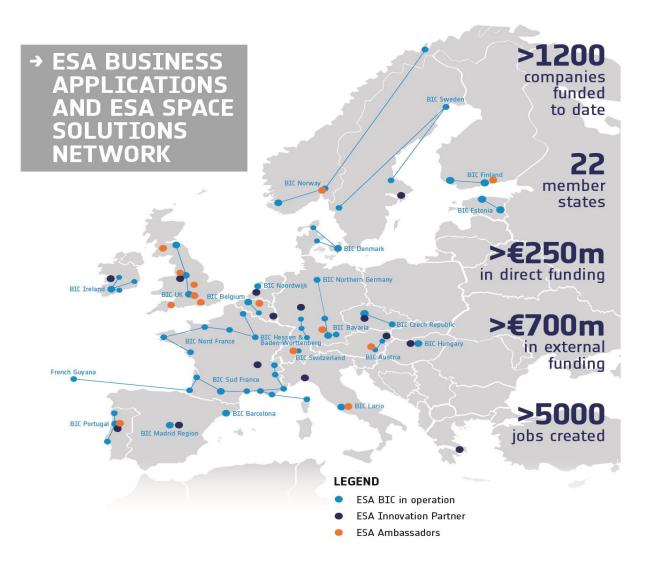
Entity Profile (Technology Provider)

Fill in applicable contact info

Entity	C	ontact Pers		
City	P	osition		
Country		ontact Pers	son Email	
Street		elephone		
Postal Code	F	ax		
Website	G	eneral Ema		
Type of entity	☐ Small or Medium enterprise		☐ Multination	onal enterprise
Mandaton	☐ Large national enterprise		☐ Inventor	
manuacory	☐ University		☐ R&D inst	itution
Select 1 option only	☐ Other			



ESA SPACE SOLUTION NETWORK







space solutions

HOW CAN YOU GET YOUR BUSINESS OFF THE GROUND?











HOW CAN YOU GET YOUR BUSINESS OFF THE GROUND?

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Získejte jako třetí v ČR až 50.000 EUR pro uvedení kosmické technologie do pozemního využití

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http://www.esa-bic.cz/





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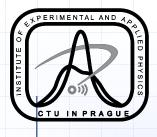




EARTH APPLICATION OF TIMEPIX SPACE RADIATION MONITOR IN A CENTRALIZED NETWORK

Benedikt Bergmann

On behalf of the Institute of Experimental and Applied Physics, Czech Technical University in Prague



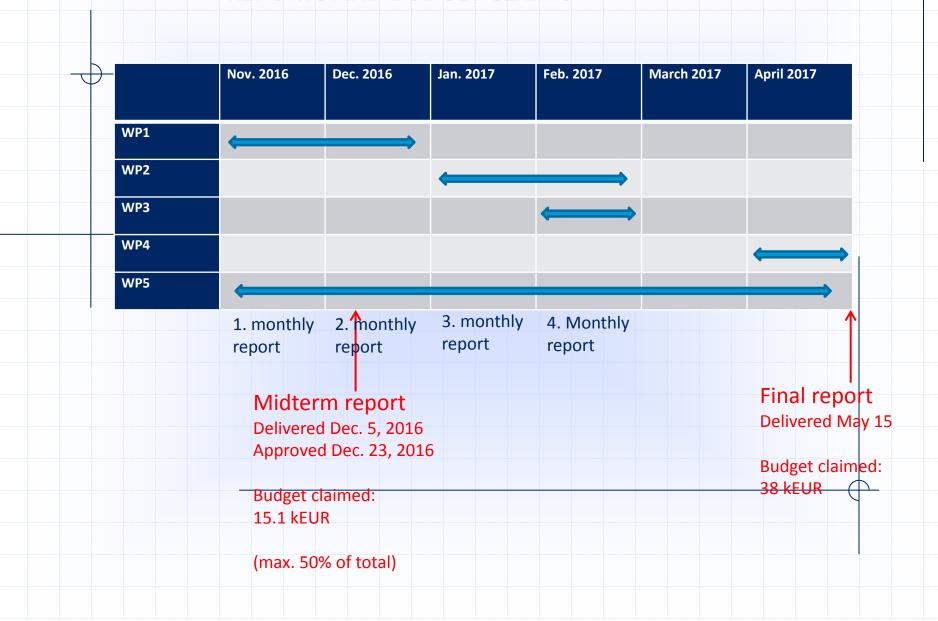
THE ADMINISTRATIVE SIDE



I AM A VICTIM OF My OWN ADMINISTRATION

- Total volume: 38 kEUR
- (Internal) meetings: 3
- Email communications with Verhaert:
 - Received: 15
 - Sent: 21
- Internal Emails (incl. SURO):
 - 44 (total)

REPORTS AND BUDGET CLAIMS





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Získejte jako třetí v ČR až 50.000 EUR pro uvedení kosmické technologie do pozemního využití

AGENDA

- ESA Technology Transfer Broker
- ESA BIC Prague
- Speed dating
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- Demonstrator Competition 2019
- ESA EMITS



Získejte jako třetí v ČR až 50.000 EUR pro uvedení kosmické technologie do pozemního využití

Rádi bychom vás informovali, že ESA vyhlásila výzvu "Technology Transfer Demonstrator Competition 2019," která vám umožní financovat projekt transferu kosmické technologie do pozemní aplikace. Letos je vyhlášena obdobná výzva "Feasibility study," která vám umožňuje zpracování studie proveditelnosti výše zmíněného transferu technologie. Jelikož je termín ukončení přijímání projektů 16.4.2019 (13:00), pořádáme TT Demonstrator Competition 2019 Workshop v předstihu, abyste se dozvěděli, jak je výzva zaměřená a jak napsat úspěšnou žádost o financování. Letos bude čas i na individuální konzultace.



Technology Transfer Demonstrator projects support the transfer of space technology to terrestrial applications where there is a strong commercial or societal benefit and there is a clear technical risk that can be eliminated.



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- Both space and non-space companies can request funding up to 50.000 euro to develop a technology transfer demonstrator.
- The Technology Transfer Demonstrators are directed specifically towards the determination and elimination of technical risk particular to the new terrestrial application.
- Space technology includes hardware, software, know-how, procedures, methodologies, systems, services ...
- The projects be executed in maximum 6 months
- Deadline: 12:59pm 16th of April 2019
- Documents:

http://emits.sso.esa.int/emits/owa/emits.main

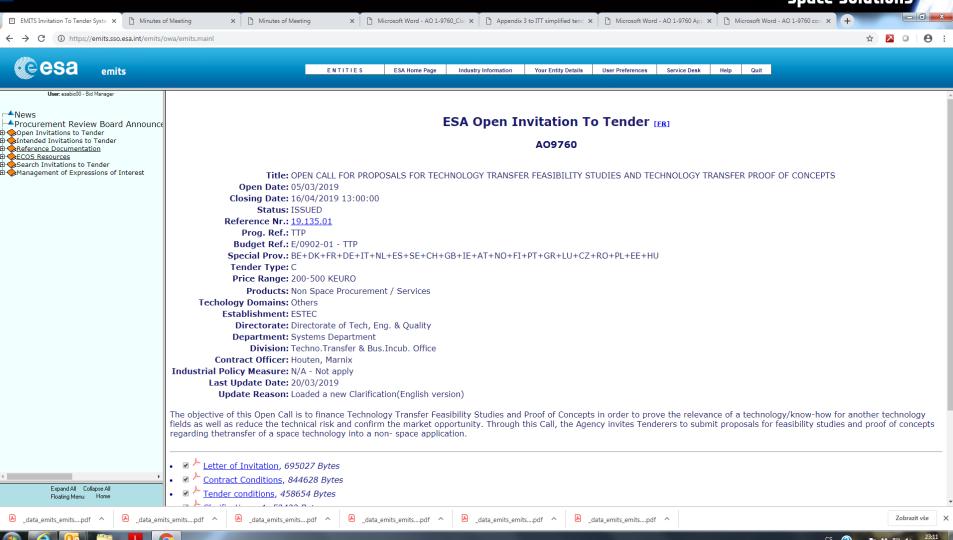
Google Chrome (x IE)

provést registraci v tendrovém portále ESA EMITS

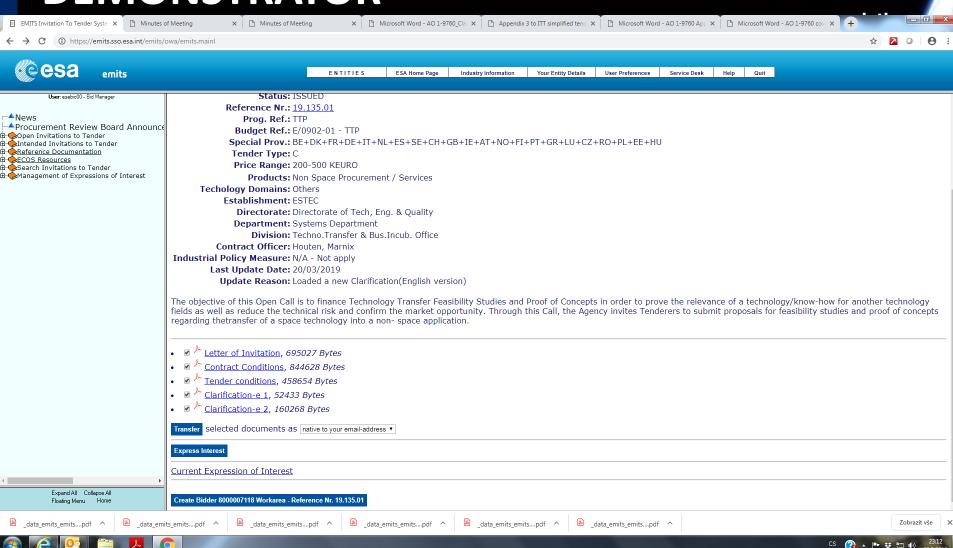
- Open to all ESA member states
- Draft Contract
- Tendering conditions EXPRO/EXPRO+
- Invitation to tender
- Clarifications FAQ...



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Appendix 1 to
ESA ITT AO/1-9760/19/NL/MH
ESA Contract No. 4000xxxxxx/19/NL/MH/KM
P a g e | 2

	DRAFT CONTRACT	
Between:		
The EUROPEAN (hereinafter called	SPACE AGENCY, "the Agency" or "ESA"),	
having its seat at:	24 rue du Général Bertrand, CS 30798, 75345 Paris CEDEX 7, France,	
represented by its	Director General, Mr Johann-Dietrich Wörner,	
acting through its	establishment:	
The European Spa located at:	ce Research and Technology Centre (ESTEC), Keplerlaan 1, 2201 AZ Noordwijk, The Netherlands,	
		of the one pa
and:		
(hereinafter called	"the Contractor"),	
whose Registered	Office is at:	
	,	
	,	
represented by its	, Ms/Mr,	
		of the other pa

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estec

European Space Research and Technology Centre Keplerlaan 1 2201 AZ Noordwijk The Netherlands T +31 (0)71 555 6565 F +31 (0)71 565 6040 www.esa.int

Responsible Contracts Officer Mr Marnix Houten (IPL-PTS) Tel. +31 71 565 8834 Fax +31 71 565 5773 E-mail: Marnix Houten@esa.int

Subject: Invitation to Tender for Open Call for Proposals for Technology

Transfer Feasibility Studies and Technology Transfer Proof of

Concepts

REF.: AO/1-9760/19/NL/MH

Activity No. 1000025216 in the "esa-star" system

ITEM No.: 19.135.01 in the List of ESA Intended Invitations to Tender

BUDGET LINE: E/0902-01-K-01

CATEGORY: ESA EXPRESS PROCUREMENT (EXPRO+) / OPEN-COMPETITIVE

Dear Sir or Madam.

The European Space Agency ("the Agency") hereby invites you to submit a proposal, in the frame of the Open Call for Technology Transfer Proposals.

This Invitation to Tender (ITT) has been established and will be processed following the approach, tailored to low- to medium-value procurement actions, called "EXPRESS PROCUREMENT Plus - EXPRO+" and a competitive evaluation procedure will be used.

Your tender is required to conform to the conditions specified in this letter and in the applicable appendices.

Your tender shall be submitted <u>exclusively in electronic format via the "esa-star" system</u> [see: https://esastar.sso.esa.intl. The EXPRO/Tender Conditions (Appendix 2 hereto) contain further information on "esa-star" and its operation.

Cover Letter ESA AO/1-9760/19/NL/MH Page 1/11

European Space Agency Agence spatiale européenne



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V9.4 – November 2018 ESA UNCLASSIFIED – For Official Use



EUROPEAN SPACE AGENCY – ESA EXPRESS PROCUREMENT PROCEDURE – "EXPRO" / "EXPRO+"

TENDERING CONDITIONS ("EXPRO/TC")

NOTE

For the purposes of "EXPRO" and "EXPRO+" categories of Requests for Proposal (RFP) and Invitations to Tender (ITT) aimed, respectively, at the placing of contracts for low- to medium-value procurements through a simplified tendering procedure, the Agency's ESA Procurement Regulations (ESA/REG/001, rev. 4) shall be the applicable regulatory framework, as specified, amended or supplemented by these EXPRO TENDERING CONDITIONS ("EXPRO/TC"). The list of adopted waivers from the ESA Procurement Regulations can be found in Annex I hereto.

In the event of conflict between the ESA Procurement Regulations and the EXPRO/TC, the EXPRO/TC shall prevail.

All the applicable requirements for the submission and the contents of tenders are set forth in the following documents:

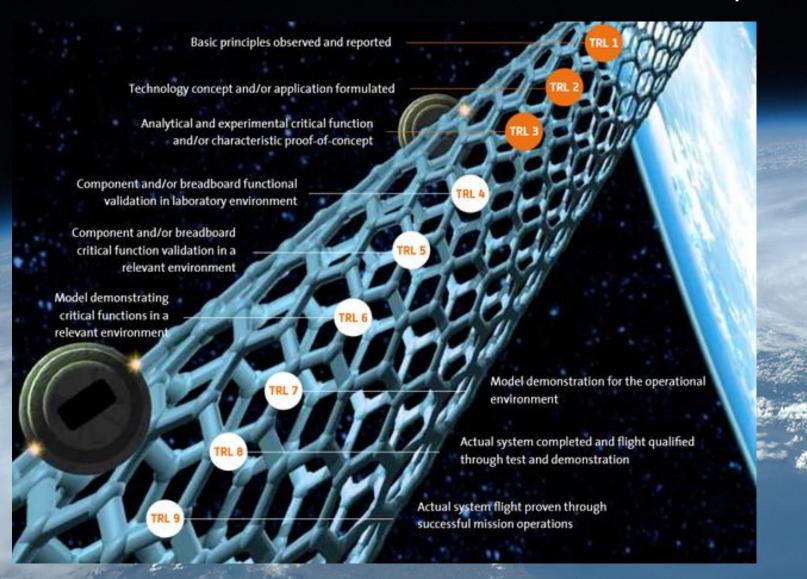
- This document, containing all the applicable general requirements concerning tenders submitted for all EXPRO/EXPRO+ procurement actions ("EXPRO TENDERING CONDITIONS or, in short, EXPRO/TC and attached to the RFP/ITT as Appendix 2) and
- a "Proposal Template" or an "RFP Response Template", <u>specific</u> to each RFP/ITT, which constitutes the latter's Appendix 3; such document lists all specific tender conditions and relevant costing forms as well as all the statements and certifications which are required from any Tenderer in an offer to ESA.

Tenderers are requested to include personal data as part of their tender as described in the "Proposal Template" or "RFP Response Template" regarding proposed Key Personnel and regarding contact details. The Agency, while not being subject to national or international laws on Personal Data Protection, ensures a high level of

European Space Agency Agence spatiale européenne



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DMEN Level	"Demand Readiness Level" (Paun, F., 2011)	Description Technology Readiness Level	TRL Level
1	Occurrence of a Feeling "something is missing"	Market certification and sales authorisation	9
2	Identification of a specific need	Product Industrialisation	8
3	Identification of the expected functionalities for the new Product/Service	Industrial Prototype	7
4	Quantification of the expected functionalities	Field demonstration for the whole system	6
5	Identification of the systemic capabilities (including the project leadership)	Technology development	5
6	Translation of the expected functionalities into needed capabilities to build the response	Laboratory demonstration	4
7	Definition of the necessary and sufficient competencies and resources	Research to prove feasibility	3
8	Identification of the Experts possessing the competencies	Applied research	2
9	Building the adapted answer to the expressed need on the market	Fundamental research	1



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<u>Template for Technology Transfer Demonstrators</u>
 <u>Proposals</u>

PROPOSAL for proof of concept / feasibility study
Proposal template
Cover Letter
Executive Summary
Detailed proposal for transfer demonstrator
Additional comments
Letter of Intent from technology receiver / interested party

https://emits.sso.esa.int/emits-doc/ESTEC/ProposalTemplate/ept9760-3a.docx https://emits.sso.esa.int/emits-doc/ESTEC/ProposalTemplate/ept9760-3b.docx



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Using space technologies for terrestrial applications

The demonstrator projects involve the development and testing of European space technology or know-how in non-space applications, with the aim to achieve a technology transfer. In the technology transfer demonstrators it is expected that the potential receiver of the technology is involved in the project and is willing to work in the endeavor to bring a space technology to a non-space product/application. Demonstrators are meant to reduce the risk of using space technologies in other applications, thus projects that have not already proved the potential use in the proposed (or similar) non-space application, will have a higher potential of selection.



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25. 3. 2019

EMITS Invitation To Tender System

Current Expressions of Interest

A09760

(Open from 05/03/2019 to 16/04/2019, 19.135.01)

OPEN CALL FOR PROPOSALS FOR TECHNOLOGY TRANSFER FEASIBILITY STUDIES AND TECHNOLOGY TRANSFER PROOF OF CONCEPTS

This list shows the entities that expressed interest in the current item, and chose Public visibility. The list is divided into two parts:

- 1. Companies having expressed interest through EMITS
- 2. Companies considered by ESA as being able to compete for all or part of the intended procurement.

Note that interest expressed before the time when the possibility to choose the visibility was offered, will be considered public.

If your entity (even through a different EMITS username) expressed interest in this item, then the name of your entity is shown in red 1 however, it will be invisible to other users if it was not marked as public - in this case, your entity is shown in red 1 however, it will be invisible to other users if it was not marked as public - in this case, your entity is shown here for your convenience only, with the indication of the visibility selected, if any, and with the list of EMITS users that expressed interest in this item.

In order to allow potential bidders to have a good understanding of the possible partners for this procurement, the interested entities below have been classified under the following colls:

- . Large Companies with 250 staff or more, or an annual turnover equal to or greater than 40MECU
- . Small Companies with less than 250 staff, and annual turnover of less than 40 MECU
- SME Small company, independent from large companies (definition as per Recommendation of the European Commission 96/280/CE of 3 April 1996. Official Journal No. L 107/8, 30 April 1996)
- R&D University, Laboratory, Research Centre
- Other Miscellaneous

See the ESA European Space Industry Directory providing the capabilities of European space industry

Part 1: Companies having expressed interest on the intended procurement through the EMITS Expression

Click <u>here</u> to get a printout with all the spacialisation fields of the interested compan							
	Business Unit Address	Contact Person Telephone Fax Email Address	Specialisation Area	Type of entity	Business Unit Name	Entity name	Preferred role (Prime/Sub)
http://http	Via del Pomerio 82100 Benevento	Luca Germano Tel:(+39) 08241774728 Luca,germano@intelligentia.it		Medium- sized	INTELLIGENTIA SRL	INTELLIGENTIA SRL	Prime
http://htt	Szachowa 04-894 Warsaw	Michal Sobolewski Tel:(+46) 533272063 m.sobolewski@composi-tech.com			Composi-tech Sp. z o.o.	Composi-tech Sp. z o.o.	Prime
	Exploration Drive LE4 5NU Leicester	Paul Houghton Twi: (+44) 78958888070 Paulhoughton65@googlemail.com			Quanta Engineering Ltd	Quanta Engineering Ltd	Etther
http://https://v	Pau Claris 08037 Barcelona	Adrià Argeni Tel: (+34) 680 336 807 contact@pangeaaerospace.com			Pangea Aerospace S.L.	Pangea Aerospace S.L.	Ether
http://http	Rue des Coquelicots 31830 PLAISANCE DU TOUCH	Rudi LENZEN TW:(+33) 5 61302745 Rudi LEnzen@smartacc.com		Medium- sized	SmartAcc Technology	SmartAcc Technology	Either
http://http	Calle Ordicia 28041 Madrid	Hector Neto Tel:(+34) 655464001 hector.nieto@complutig.com	Evapotranspiration modelling Radiative Transfer Model Inversion LIDAR Crop modelling		Complutum Tecnologías de la Información Geográfica S.L.	Complutum Tecnologías de la Información Geográfica S.L.	Prime
http://http:	Route des Dolines 06560 Valbonne Sophia-Antipolis	Yadre Benyousef Twi:(+33) 695906318 yacine.benyoucef@spacemedex.com		Medium- sized	SPACEMEDEX	SPACEMEDEX	Ether

https://emits.sso.esa.int/emits/owa/emits.mainl

1/1



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Part 1: Companies having expressed interest on the intended procurement through the EMITS Expression Click <a href="https://example.com/here-to-get-a-printout-with-all-the-spacialisation-fields-of-the-interested-compan-th-example.com/here-to-get-a-printout-with-all-the-spacialisation-fields-of-the-interested-compan-th-example.com/here-to-get-a-printout-with-all-the-spacialisation-fields-of-the-interested-compan-th-example.com/here-to-get-a-printout-with-all-the-spacialisation-fields-of-the-interested-compan-th-example.com/here-to-get-a-printout-with-all-the-spacialisation-fields-of-the-interested-compan-th-example.com/here-to-get-a-printout-with-all-the-spacialisation-fields-of-the-interested-compan-th-example.com/here-to-get-a-printout-with-all-the-spacialisation-fields-of-the-interested-compan-th-example.com/here-to-get-a-printout-with-all-the-spacialisation-fields-of-the-interested-compan-th-example.com/here-to-get-a-printout-with-all-the-spacialisation-fields-of-the-interested-compan-th-example.com/here-to-get-a-printout-with-all-the-spacialisation-fields-of-the-interested-compan-th-example.com/here-to-get-a-printout-with-all-th-example.com/here-to-get-a-printout-with-all-th-example.com/here-to-get-a-printout-with-all-th-example.com/here-to-get-a-printout-with-a-printou

Preferred role (Prime/Sub)	Entity name	Business Unit Name	Type of entity	Specialisation Area	Contact Person Telephone Fax Email Address	Business Unit Address	WEE
Prime	INTELLIGENTIA SRL	INTELLIGENTIA SRL	Medium- sized		Luca Germano Tel:(+39) 08241774728 <u>luca.germano@intelligentia.it</u>	Via del Pomerio 82100 Benevento	http://http://
Prime	Composi-tech Sp. z o.o.	Composi-tech Sp. z o.o.			Michal Sobolewski Tel:(+48) 533272063 m.sobolewski@composi-tech.com	Szachowa 04-894 Warsaw	http://http:/
Either	Quanta Engineering Ltd	Quanta Engineering Ltd			Paul Houghton Tel:(+44) 78958888070 Paulhoughton65@googlemail.com	Exploration Drive LE4 5NU Leicester	
Either	Pangea Aerospace S.L.	Pangea Aerospace S.L.			Adrià Argemí Tel:(+34) 680 336 807 <u>contact@pangeaaerospace.com</u>	Pau Claris 08037 Barcelona	http://https://www
Either	SmartAcc Technology	SmartAcc Technology	Medium- sized		Rudi LENZEN Tel:(+33) 5 61302745 Rudi.Lenzen@smartacc.com	Rue des Coquelicots 31830 PLAISANCE DU TOUCH	http://http://
Prime	Complutum Tecnologías de la Información Geográfica S.L.	Complutum Tecnologías de la Información Geográfica S.L.		Evapotranspiration modelling Radiative Transfer Model inversion LiDAR Crop modelling	Hector Nieto Tel:(+34) 655464901 hector.nieto@complutig.com	Calle Ordicia 28041 Madrid	http://http://
Either	SPACEMEDEX	SPACEMEDEX	Medium- sized		Yacine Benyoucef Tel:(+33) 695906318 yacine.benyoucef@spacemedex.com	Route des Dolines 06560 Valbonne Sophia-Antipolis	http://http://w



Process (in 2018)

First all proposals will be checked by an <u>Opening</u>
<u>Board</u>, if formal requirements accomplished. When compliant, the <u>Tender Evaluation Board</u> (ESA, VERHAERT, stakeholders and experts) will evaluate the proposals on the selection criteria. The Board will <u>inform the applicant</u> of the evaluation in writing. The <u>10 proposals</u> with the highest marks will be selected for negotiations.



Evaluace (v roce 2018)

Current Development Status

Has the space technology been developed sufficiently for a technology transfer to non-space application. It is necessary to look both in the TRL in space and the approximate for non-space. High TRL level in space is expected. (15%)

Attractiveness of Non-Space Market

Attractiveness of Non-Space Market – an estimate of the size of technology's final application/market and its potential value in commercial or societal terms. Credibility of the potential access to market will be assessed. (20%)

Novelty and Intellectual Property The novelty of the technology in its non-space application and the consequent competitive advantage. The current status of the IPRs and the potential protection of the results. (20%)



Evaluace

Project Feasibility

An estimate of the likelihood of the Technical Demonstrator achieving its technical objectives in the stated budget and a successful transfer in a reasonable time-frame. Compliance with the time frame proposed in the call. (25%)

The Need for a Technology Demonstrator

The likelihood and expected timing for the technical demonstrator to lead to the engagement of customers with the expected timing and the need of financial support by the Agency. To ensure that the demonstrator project can result in a technology transfer and commercial application a clear letter of support from a receiver is expected. (20%)

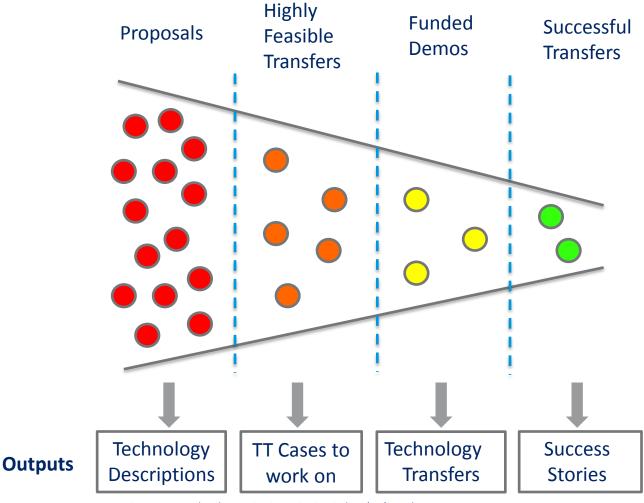


10 feasibility studies are available, for €10.000 each

8 proof of concepts (former demo's) are available, for €50.000 each

IMPACT OF THE DEMONSTRATORS CALL





Demonstrators Results 2009-2015 | LD| Noordwijk, Netherlands | 12/08/2016 | Page 37

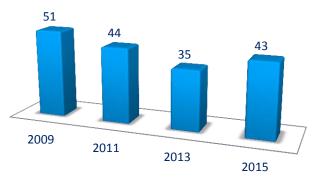
DEMONSTRATORS IN NUMBERS

- NUMBER OF GENERAL CALLS: 3 (2009, 2011, 2013, 2015, 2016)

- NUMBER OF APPLICATIONS:

Evolution of Number of Applications

■ Evolution of Number of Applications



Applications vs Projects Funded

- NUMBER OF GRANTED PROJECTS

■ Number of Applications ■ Funded Demos





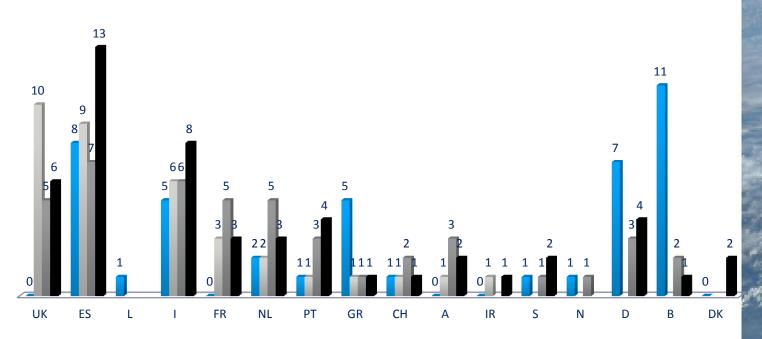
DEMONSTRATORS IN NUMBERS

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- RESULTS OF THE DEMONSTRATORS CALLS

Applications by Country and Year

■ 2015 ■ 2013 ■ 2011 ■ 2009



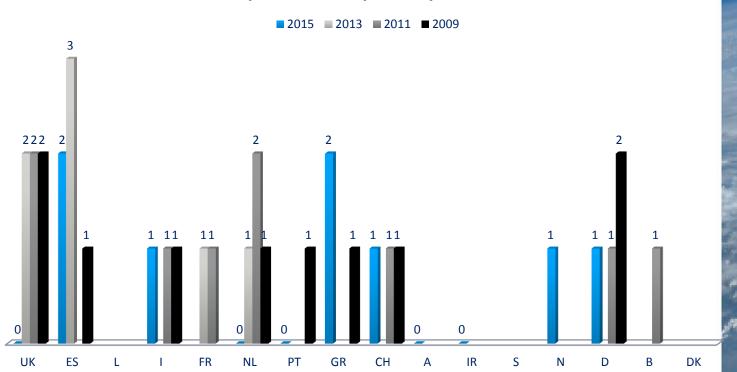
Demonstrators Results 2009-2015 | LD | Noordwijk, Netherlands | 12/08/2016 | Page 39

DEMONSTRATORS IN NUMBERS

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- RESULTS OF THE DEMONSTRATORS CALLS

Projects Funded by Country and Year



Demonstrators Results 2009-2015 | LD | Noordwijk, Netherlands | 12/08/2016 | Page 40

2. MAIN RESULTS - 2009

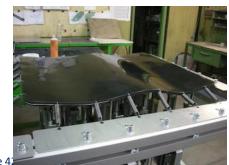
Company	Country	Title	Transfer Status	Description of the Status
Imperial College London	UK	High performance space science magnetometers adapted for Downwell operation in the Oil and Gas Sector	In process	Not yet a transfer but still in contact and the technology. UK broker supporting company
Sci Sys (UK) LtD	UK	Drilling Operations Automation Demonstrator	Transferred	Improving oil and gas drilling using space software. Schlumberger utilized the technology.
Omnidea Lda.	РТ	Reusable anesthetic liquid containers for medical applications	No	Omnidea informed that the technology was for medical helicopters of Magna. No final product developed because scale-up of the technologies was highly expensive.
cosine Science & Computing BV	NL	Hand-held High-Definition 3D camcorder Demonstrator	Transferred	Product in the market developed and commercialized by cosine
Stam s.r. l. Genova	I	LIGHT-GEAR-innovative gearbox system from space to ultra light sector	Transferred	Used by EUREN Italy in improvements in the production process of variable speed ratio mechanisms.
IMMG S.A.	GR	Multifunctional cellular sandwich panels for car/bus/coach bodies	No	Greek company found out that the solutions was too expensive for the target market
Inasmet	ES	Multifunctional electronic housings for light weight in aeronautic avionics	Transferred	Technology currently being used in a new product developed in the framework of a EU project
FormTech GmbH	D	VETIS- Pressure vessels with complex shape from high-strength an corrosion resistant titanium and steel alloys	No	Shaping a transition from rocket fuel to oil rigs. Product available for the oil and gas industry.
Max-Planck-Institutfür extraterrestrischePhysik	D	Hand Plasma Dispenser	Transferred	Zapping deadly bacteria using space technology. Used by a company currently incubated in ESA BIC Bavaria
CSEM	СН	PULSEAR-Innovative combination of music listening and heart rate monitoring	In process	Let me hear your heart beat. Technology being used in watches and devices but still evolving.



MAIN RESULTS – EXAMPLES

- **DEMONSTRATOR:** FLEXCOMP DEVELOPMENT OF A FLEXIBLE MOULD FOR MANUFACTURING OF COMPOSITE MATERIAL COMPONENTS FOR AUTOMOTIVE AND AERONAUTIC FIELDS
- FROM SPACE TO EARTH: IN 2006 THE NASA ENGINEERING AND SAFETY CENTRE INVESTIGATED THE FEASIBILITY OF A COMPOSITE CREW MODULE FOR THE CREW EXPLORATION VEHICLE, WITHIN THE CONSTELLATION PROGRAM. DURING THIS RESEARCH, A SPECIAL DISCRETE TOOL WAS DEVELOPED, TO MANUFACTURE COMPONENTS MADE OF COMPOSITE MATERIAL. THE TARGETED MARKET OF THE FLEXCOMP SYSTEM IS THE COMPOSITE COMPONENTS MANUFACTURING, MAINLY FOR THE AUTOMOTIVE AND AERONAUTIC FIELDS, TAKING
 A SPECIAL DISCRETE TOOL THAT CAN BE RE-SHAPED. THE KEY TECHNOLOGY DEVELOPMENT CONSISTS IN USING FLEXIBLE RECONFIGURABLE MOULD THAT REDUCES DRASTICALLY THE COST AND TIME OF COMPONENTS MANUFACTURING.
- CONTACT: MS. STEFANIA AMADIO, STAM SRL, ITALY
- CURRENT APPLICATION: COLLABORATION WITH A COMPANY FOR EXPLOTATION IN

CONSTRUCTION AND OTHER SECTORS. ESA LINK





Demonstrators Results 2009-2015 | LD | Noordwijk, Netherlands | 12/08/2016 | Page 4

MAIN RESULTS – EXAMPLES

- **DEMONSTRATOR:** PROTHERM HIGH PERFORMANCE THERMAL PROTECTION SHIELDS OF THIN CORROSION RESISTANT STEEL SHEETS
- FROM SPACE TO EARTH: THERMAL PROTECTION (TP) IS CRITICAL FROM BOTH THE DESIGN AND THE MATERIAL POINT OF VIEW. FORMTECH GMBH IS INVOLVED IN THE DESIGN AND BUILD OF TITANIUM-ALLOY SANDWICH PANELS, WHICH CAN EASILY BE REPLACED, EVEN IN ORBIT.

THE TERRESTRIAL APPLICATION REFERS TO HEAT SHIELDS AROUND THE EXHAUST SYSTEM IN CAR ENGINES. THEY GET MORE AND MORE IMPORTANCE WITH INCREASING EXHAUST GAS TEMPERATURE AND THE REDUCTION OF DISTANCE GAPS BETWEEN THE HOT SECTION AND THE SURROUNDING STRUCTURE. METALLIC TP-SHIELDS CAN PROVIDE SIGNIFICANT ADVANTAGES FOR SUCH APPLICATIONS.

- CONTACT: MR. WERNER BECK, FORMTECH, GERMANY
- CURRENT APPLICATION: AUTOMOTIVE INDUSTRY





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Demonstrators Results 2009-2015 | LD | Noordwijk, Netherlands | 12/08/2016 | Page 43



Získejte jako třetí v ČR až 50.000 EUR pro uvedení kosmické technologie do pozemního využití

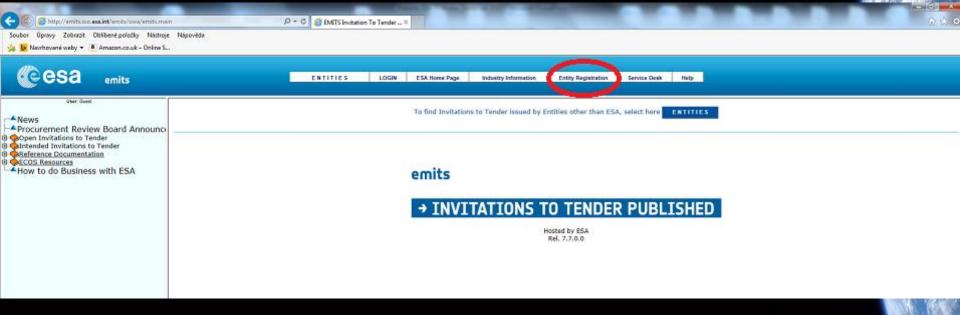
AGENDA

- ESA Technology Transfer Broker
- ESA BIC Prague
- Speed dating
- Success stories
- Demonstrator Competition 2019
- ESA EMITS

ESA EMITS – TENDROVÝ PORTÁL: "ENTITY REGISTRATION"



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