



BALTIC
SEA & SPACE
CLUSTER



Komisja
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Baltic Sea & (Outer) Space

New Perspective for our Region

September 20, 2018
10:00 – 13:00



Institute of Oceanology
of the Polish Academy of Sciences

PROGRAM & ABSTRACTS

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SOPOT 2018

BALTIC SEA & (OUTER) SPACE. NEW PERSPECTIVE FOR OUR REGION

SEPTEMBER 20, 2018 10:00 – 13:00
INSTITUTE OF OCEANOLOGY OF THE POLISH ACADEMY OF SCIENCES
Powstańców Warszawy 55, 81-712 Sopot, Poland

STEERING COMMITTEE

Prof. Edmund Wittbrodt, Gdańsk University of Technology

Prof. Zdzisław Brodecki, Space Sciences Committee

PhD Tomasz Białas, University of Business and Administration in Gdynia

Assoc. Prof. Marek Grzybowski, Gdynia Maritime University

Assoc. Prof. Grzegorz Krasnodębski, Polish Naval Academy

Assoc. Prof. Mirosława Ostrowska, Institute of Oceanology of the Polish Academy of Sciences

Prof. Andrzej Stepnowski, Gdańsk University of Technology

Assoc. Prof. Adam Wiśniewski, University of Gdańsk

ORGANISING COMMITTEE

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Karolina Borzycka – Institute of Oceanology of the Polish Academy of Sciences

Paweł Chyc – University of Business and Administration in Gdynia

Marta Konik – Institute of Oceanology of the Polish Academy of Sciences

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Monika Zabłocka – Institute of Oceanology of the Polish Academy of Sciences

Agnieszka Zdun – Institute of Oceanology of the Polish Academy of Sciences

Tymon Zieliński – Institute of Oceanology of the Polish Academy of Sciences

MORE INFORMATION

www.iopan.pl/KNK

CONTACT

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CONFERENCE AGENDA

OPENING

10:00 – 11:00

- Prof. Jan Marcin WĘSŁAWSKI, Director of the Institute of Oceanology of the Polish Academy of Sciences
- Prof. Edmund WITTBRODT, President of the Space Sciences Committee of the Polish Academy of Sciences, Gdansk Branch
- PhD. Marek GRZYBOWSKI, President of the Baltic Sea & Space Cluster
- Prof. Zdzisław BRODECKI, President of the THINK TANK (Baltic Sea & Space Cluster)
- PhD. Grzegorz BRONA, President of the Polish Space Agency

MAIN SESSION part I

11:00 – 11:30

- Satellite monitoring of the Baltic Sea environment, SatBałtyk – Mirosława OSTROWSKA, Institute of Oceanology of the Polish Academy of Sciences
- European Network of Maritime Clusters activity and strategy – Arjen UYTENDAAL, President of the European Network of Maritime Clusters

COFFEE BREAK

11:30 – 12:00

MAIN SESSION part II

12:00 – 12:30

- Space3ac – a unique acceleration program for incubating start-ups sea and space technologies – Agata MARSZOŁEK, Pomeranian Special Economic Zone
- *****
- Baltic Sea & Space Cluster as a strong brand in Baltic Sea Region – Marcin WIĘCKOWSKI, Managing Director, Head of Strategy, WHIZBRAND

DISCUSSION, CONFERENCE CLOSING REMARKS

12:30 – 13:00

Edmund Wittbrodt

President of the Space Sciences Committee of the Polish Academy of Sciences
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Undoubtedly, space activity opens new, vast possibilities but it also poses new challenges. Not only are these challenges associated with technology and technical matters but also with the access to the outer space, safety, legal regulations, administration and management of the outer space.

These days we can confidently say that a day without satellites would have grave and disastrous consequences for our daily lives. This statement is true for telecommunication, remote sensing and observation of our planet's weather, environment, safety, rescue services, Internet and navigation services, to name but a few. Space activity has a crucial meaning for the whole mankind and is significant for the global economy. Its value is estimated to reach 320 billion dollars. There are 70 space agencies operating worldwide, 60 countries operate satellites and 13 owns independent launching technologies capable of transporting satellites to the orbit. More than 1300 satellites are currently active in space and the number of commercial satellites exceeds the number of military satellites. The number of launched small satellites – cubesats – has been significantly increasing recently.

The establishment of the Polish Space Agency (POLSA) in 2014 considerably invigorated companies, research institutions and universities and also launched a wide co-operation in terms of space issues in various – and, seemingly, distant areas. In Pomeranian region for example, an inter-university second degree studies Space and Satellite Technologies was initiated. Three universities: Gdańsk University of Technology, Gdynia Maritime University and Polish Naval Academy with the support of the Polish Space Agency participate in this project, and about 60 students, including students from the USA are enrolled. It should be emphasized that the course obtained financing from the Ministry of Science and Higher Education to ensure that the curriculum is adopted for the needs of companies operating in the space sector. MA theses at this course are resulting from the needs of the companies and are being completed with the cooperation of such space sector companies as: *Blue Dot Solutions*, *Space Forest*, *ABM Space*, *WASAT*, *CBK*, *APS*.

The Committee of Space and Satellite Research was established at Gdańsk Branch of Polish Academy of Sciences, representing scientific community and space sector companies. The committee is of interdisciplinary character, although it operates in five divisions: space technologies, space law, outer space management, safety and Baltic Sea issues – the latter is particularly important for us in Pomeranian region.

In the first year of its activity, the Space and Satellite Research Committee organized a series of six national and international conferences. Matters regarding Polish space strategy, space engineering, establishment of space cluster, space

code and connection between space and sea – where two horizons meet, or the application of space and satellite technologies in safety systems were discussed. Apart from these, we also considered practical usage of space in Pomeranian region, including the possibilities of SAT BAŁTYK system to monitor the environment of Baltic Sea and satellite remote sensing in research and monitoring of the marine environment.

In July, Polish Sea Cluster, an institution renowned in Poland and recognisable abroad, was transformed into the *Baltic Sea and Space Cluster*. Space and Satellite Research Committee of the Polish Academy of Sciences became a member of the BSSC. The Cluster is one of the co-organizers of today's conference, and we have already planned the organisation of the next five conferences. It is a great opportunity to express my gratitude to professor Marek Grzybowski, the president of the Cluster for his cooperation outlook.

Currently, in Pomeranian region there are certain activities underway aiming at the establishment of innovation centre at the Marshall's Office, dedicated to the application of space and satellite technologies in marine economy, supported by Polish Space Agency, Gdańsk University of Technology, our sea ports and companies.

We are happy to welcome the president of Polish Space Agency, Grzegorz Brona PhD, who can see and experience the interest of the whole Pomeranian community in space and satellite technologies. Matters connected with the Baltic Sea should constitute one of the key pillars of Polish Space Agency.

We are also very glad to welcome Mr Arjen Uytendaal, president of the *European Network of Maritime Clusters*, since international co-operation has a significant meaning for us. It is a great opportunity for talks about the details of the cooperation in sea and space matters.

In conclusion, I would like to express my gratitude to the host of our conference, the head of the Institute of Oceanology of Polish Academy of Science in Sopot, professor Jan Węśławski for his consent for organizing the conference and for playing the host. I would also like to thank professor Mirosława Ostrowska for dealing with the difficult organisation matters. I would like to wish you all a successful conference, interesting discussions and fruitful proceedings.

Marek Grzybowski

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BALTIC SEA & SPACE CLUSTER

BALTIC SEA & SPACE CLUSTER is an important Maritime and Space Cluster in Central and Eastern Europe, an active maritime cluster player in the Baltic Sea Region and the EU, as well as a member of the European Network of Maritime Clusters, United Nation Global Compact and The European Cluster Collaboration Platform. The **BALTIC SEA & SPACE CLUSTER** focuses on transferring knowledge and organizing business, science and administration cooperation in a global and regional scale. The cluster thinks globally and acts globally.

BALTIC SEA & SPACE CLUSTER (BSSC) is an effective promoter of the Polish Maritime Industry and Space Technology and utilizes Polish coastal location as a national treasure. Cluster acts as a partner and a participant in numerous endeavors regarding Polish maritime and space economy, including by creating it as an equivalent of the national and European intelligent specialization. Cluster also interacts in the International Ocean Governance programme.

BALTIC SEA & SPACE CLUSTER are active in Poland as an expert in projects:

1. SMART PANEL – qualitative research and analysis for the needs of the Entrepreneurial Discovery Process –PARP project (carried out by DANAE)
2. SIEĆ OTWARTYCH INNOWACJI (OPEN INNOVATION NETWORK) – Industrial Development Agency project (carried out by INVESTIN)
3. ISP1 – Pomeranian Smart Specialization – Offshore And Port-Logistics Technologies
4. KIS 17: National Smart Specialization – Innovative Marine Technologies In The Field Of Specialized Vessels, Marine and Offshore Constructions and Logistics Based on Sea and Inland Transport

BALTIC SEA & SPACE CLUSTER support projects:

1. TENTacle – Capitalising on TEN-T core network corridors for prosperity, growth and cohesion
2. ELMAR – Supporting South Baltic SMEs to enter the international supply chains & sales markets for boats & ships with electric propulsions
3. ECOPRODGI – Eco-efficiency to maritime industry processes in the Baltic Sea Region through digitalisation
4. E-LASS – European network for lightweight applications at sea
5. InterMarE – Strengthening the international activity of blue sector SMEs in the South Baltic Sea area

6. UMBRELLA – helps boosting cross-border cooperation capacities of Local Actors in the South Baltic Sea
7. COGEA, CETMAR, POSEIDON. – Study on The Establishment of a Framework for Processing and Analysing Maritime Economic Data in Europe

Its high position in the national and international market owes to its supporting participants when publishing an up-to-date relevant information on www.klastermorski.com.pl and FB/TW. Cluster registers up to a thousand website visits or browser search per day. It is a significant outcome, remembering cluster's exclusive and international-wide character. Such website section, as for instance, Clusters Observatory, Maritime Law, Baltic Sea Region Maritime Clusters Network, Port Community System, Maritime Policy, Baltic Sea Region Programme 2014-2020, Smart Specializations, Maritime Think Tank, requires greater recognition.

PMC participates in numerous ENMC initiatives together with Karmenu Vella (European Commissioner for Environment, Fisheries and Maritime Affairs) and DG MARE, and Gesine Meissner (European Parliament, "Seas and Coastal Areas Intergroup" of the European Parliament). BSSC interacts also in the annual European Maritime Day by organising workshops and discussion panels (Gdansk, Brema), cooperates with the Polish Chamber of Maritime Commerce, Polish Nautical Association and other maritime clusters in Poland, i.e. Westpomeranian Maritime Cluster in Szczecin, Maritime Cluster of West-Pomerania and Transport-Logistics North-South Cluster.

Main Members:

Only the innovative firms and strong international brands are a cluster members. Gdańsk University, Gdynia City, Pomeranian Special Economic Zone; Port Gdynia Authority; Port Gdańsk Authority; Automatic Systems Engineering; PROMECO; Faculty of Ocean Engineering and Ship Technology (Gdańsk University of Technology); Gdynia Maritime University; Ośrodek OBR CTM S.A. – Center of Maritime Technology, member of PGZ – POLISH ARMAMENTS GROUP; NAUTA Shiprepair Yard, member of MARS Shipyards & Offshore Group; HYDROMEGA; HAMOND METHOD; Security and Safety Research Institute; The Gdynia Maritime School; GrECo Group, partner of JLT International Network™; PARTNER-SHIP.

Main Partners:

European Network of Maritime Clusters, United Nation Global Compact; The European Cluster Collaboration Platform; Adriatic Maritime Cluster, Marine Cluster Bulgaria; Flanders' Maritime Cluster; French Maritime Cluster (CMF) ; Irish Maritime and Energy Resource Cluster; Cluster Maritime Luxembourgais; Federazione del Sistema Marittimo Italiano; Cluster Marítimo Espanol (CME); Fórum Oceano – Associação da Economia do Mar; Maritime by Holland; Baltic Port of New Technologies (BPNT), Ogólnopolski Klaster Innowacyjnych Przedsiębiorstw, Klaster COP.

Zdzisław Brodecki

President of the THINK TANK (Baltic Sea & Space Cluster)

Sponsalia ex noc Mundo¹

„Think out of the box”

1. We should recognize that the sea sciences and the outer space sciences are closely inter-related in areas of technology and technics, management and governance, law and policy. Both these perspective have to be viewed in the 21st century in the context of the changing face of integrated system of science and practice. These two fields are increasingly becoming different from what they used to be only a few decades ago.

2. When working for the perspective of the history of humans and the sea, the story of outer space seems like a water glass experiment – short and specialised. Nevertheless, the space infrastructure (the use of artificial Earth satellites for Direct Television Broadcasting, communications, remote sensing, navigation and military missiles) affects infrastructure of our Planet, including the maritime infrastructure (the seaports, etc.). The problem of safety and security of BSSC infrastructure (illustrated by BSSC logo) takes into account the objective of promoting technological innovation and the transfer of technology.

3. In every civilized society the order must sooner or later supersede chaos and anarchy which were always seen as inimical to a just and stable relations. The development of BSSC infrastructure would essentially be subject to new system of management and good governance – whether national, regional or international. In new perspective, individuals from all parts of the world could consider themselves as integrated part of the global system, with common interests and values applying to all across the globe.

The launcher business is less dominated by public spending and public industries than in the first years of use of outer space for peaceful purposes. Today, there are so many companies in space industry that no one of them can influence the market by its individual decisions. In the context of space industry the great policy issues are raised. For example, is there an inherent conflict between efficiency and fairness? Can economics identify a just distribution of goods and services?

4. If Rome was not built in a day, space law was. Why? Because of the spirit, the pressure, the need and a forum. The „Magna Carta” or the „Bible” of space law (the Outer Space Treaty of 1967) has been inspired by the Antarctic Treaty of 1959 and the Nuclear Test Ban Treaty of 1963. Other treaties of space law have been also promoted mostly by law of the sea concepts.

Ironically, the United States which has always ardently supported the *Resolution containing the Principles Relating to Remote Sensing of the Earth from Outer*

Space issued on 3rd December 1986 by the UN General Assembly, became the first State that impose complex and extensive legal prohibition on the collection and distribution of remote sensing. This has happened when the *Interim Final Regulations relating to the Licensing of Private Land Remote – Sensing Space Systems* issued on 31st July 2000 have been adopted by the National Oceanic and Atmospheric Administration. The terms „national security” and „foreign policy” are nowadays often used as the basis of national restrictions, which made the international legal instruments almost „dead”.

In the case of conflict between sources of public international and domestic law, there is no effective executive system, no overarching judiciary system or a unified system of sanctions. One may, therefore, expect that in the near future the most important source of international law will be custom. This process of coming into existence follows into the footsteps of how the law of the sea has developed over the years.

5. The increasing significance of „good theory” as *conditio sine qua non* of „good practice” is the main reason for our engagement in the activity of THINK TANK under the auspices of BSSC. The importance of good practice is closely visible in the domains of technical satellite system, economic applications and commercial services as well as future space legislation to be more technically detailed and precise. We need to consider how to reconcile more diverse national interest which will have to be taken on board by the EU members of Baltic euroregion.

Identify of „Baltic Europe” should be reconstructed under circumstances linking sea activity and outer space activity. There is seemingly no reason why our sub-regional community should not give such recognition to the „common interest” which is aimed at the protection of the interest of international community as a whole.

Grzegorz Brona

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The Polish National Space Programme

Polish Space Agency (POLSA) is responsible for preparation and implementation of the National Space Programme – an executive programme for Polish Space Strategy prepared and published by Polish government in 2017. The goal behind developing and implementing the National Space Programme is to establish competences to fulfil the national needs relating to space technologies and to increase competitiveness on the international market of the Polish space sector. The National Space Programme assumes implementing variety of tasks in different areas of the space industry, as selection and financing of the Polish science satellite programmes, development and launch of sub-orbital rockets, satellite

¹ Handfasting out of this World

data gathering, storage and analysis, education, promotion of Polish space sector. The National Space Programme assumes diversification of financial sources: coming from the central budget managed by POLSA, European Space Agency funding, European programmes and other public and private sector sources. Important role of the National Space Programme is to encourage and support Polish public administration in satellite data usage for crisis management, planning, environment monitoring and other different tasks. One of the National Space Programme parts is dedicated to support marine oriented space projects. It includes projects as environment monitoring using satellite data, marine objects identification and satellite navigation precision validation.

Mirosława Ostrowska

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Satellite monitoring of the Baltic Sea environment, SatBałtyk

The ecosystem of the Baltic Sea is subject to powerful extraneous influences, and is especially vulnerable to human activities. The permanent monitoring of the Baltic's condition is indispensable for assessing such threats and counteracting their effects.

Up to date and detailed information, essential for assessing the current state of the environment will be highly reliable if:

- satellite data are used for the day-to-day monitoring of large sea areas;
- environmental information is updated and expanded by use of ecohydrodynamic models;
- the information from both sources is supported by in situ measurements from continuous monitoring systems (buoys, shore stations, drones) and research vessels.

SatBałtyk – easy accessible and cost effective system operationally exploiting all available sources of data and information on the Baltic Sea as well as expert knowledge was developed and launched in 2015 by SatBałtyk Scientific Consortium in frame of European Funds (**Innovative Economy Programme**). Variety of services provided by organisations contributing to project (ie the Institute of Oceanology PAN in Sopot – the project coordinator, the University of Gdańsk, the Pomeranian Academy in Słupsk and the University of Szczecin) are integrated on the unified platform and streamlined to the endusers.

The SatBałtyk System enables the ongoing imaging and forecasting of the physical, chemical and biological properties of the Baltic environment at different depths, and in certain situations, also for different wavelengths of visible light. Apart from the typical oceanographic characteristics of the marine environment

the system determines specialised parameters describing complex natural processes. Many of these characteristics are unique, and their values are not determined operationally by any other comparable system.

One unique set of characteristics involves **aspects of the energy balance**, e.g. downward and upward flows and doses of long- and short-wave solar radiation, and sensible and latent heat. Another set of parameters covers **seawater constituents**, e.g. phytoplankton biomass, concentration of chlorophyll *a* and other phytoplankton pigments at different depths in the sea, and nutrient concentrations.

The System also supplies information characterising **the state of the atmosphere and meteorological conditions**, e.g. air temperature, atmospheric pressure, cloudiness, wind speed and direction, distribution of solar radiation at the sea surface; **hydrological information**, e.g. temperature and salinity of the water at different depths, the dynamic state of the sea surface, sea level, ice cover; and a whole **range of optical characteristics** of Baltic Sea waters, e.g. concentrations of optically active seawater constituents, absorption coefficients of solar radiation.

Extremely useful for assessing the condition of Baltic plant communities are parameters like spectral distributions of photosynthetically active radiation (PAR) and the energy absorbed by **phytoplankton** at different depths, vertical distributions of the quantum yield of photosynthesis and the **primary production** of organic matter and the total amount of organic matter produced in the sea, phytoplankton biomasses. Also available is information on possible **threats**, e.g. blooms of potentially harmful cyanobacteria.

Effects and forecast threats to the coast caused by ongoing and anticipated storm states, such as the extent of beach inundation by storm waves and erosion of shoreline material, to name but two examples are described for the whole or parts of the Polish **coastal zone**

The SatBałtyk System enables users not only to track changes in the marine environment on a long-term basis, but also to comprehensively analyse the processes taking place in Baltic ecosystems, essential for the spatial management of the marine environment, the exploitation of its natural resources, the minimisation of the effects of water pollution and the limitation of the consequences of extreme events. Such a holistic assessment of the condition, transformations and functioning of the Baltic Sea environment is crucial, for example, in the light of ongoing global climate changes. It may also be found useful in the context of different branches of the economy, environmental conservation, science, recreation, sport, and in many other areas.

Up to one hundred parameters currently available in the system have been divided into eight groups: 1. Atmosphere, meteorology, 2. Hydrology, 3. Ocean optics, 4. Radiation budget, 5. Sea water components, 6. Phytoplankton, photosynthesis, 7. Coastal zone, 8. Hazards. The spatial distributions of these parameters are available in near real time to users on the website <http://satbaltyk.iopan.gda.pl/>.

The information contained on the SatBałtyk site includes a detailed description of the parameters presented along with an assessment of their accuracy, as well

as popular-science and educational materials, scientific research materials and a whole range of continuously updated news.

The broad body of knowledge available on SatBałtyk is aimed at a highly diverse group of recipients: institutional users (various levels of government, the military and security sector, the emergency services, water management boards and environmental conservation inspectorates, environmental organisations, companies involved in the maritime economy), scientists, teachers and other interested persons.

Arjen Uytendaal

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European Network of Maritime Clusters activity and strategy

The European Network of Maritime Clusters is a confederation of Clusters or equivalent structures. It has to be understood as a best practices dissemination and exchange platform through the website,, informal talks and an annual summit during which each country gives a brief presentation of the economic situation of its maritime sector and the recent actions of its national organization. The aim is to establish a framework for future common targeted actions.

All of the member organizations are, or tend to be, cross-industry organizations gathering all or part of the maritime subsectors of their countries. The type of each national Cluster varies, with some being almost state-controlled or purely private-owned or being an intermediate mix. Some Clusters include inland navigation and or logistic sectors, port industries, coastal tourism, insurance and finance in their scope; others do not.

Up to now, we are not The European Maritime Cluster but we could grow into in a few years, provided all Clusters have reached a harmonized level of development. However from ten countries at the beginning in 2005, the ENMC was continuously extending its membership and geographical coverage.

The objectives of the European Network of Maritime Clusters are simple: to promote and reinforce the European maritime sector and the maritime economy as a whole. This has been done by setting up a network, still rather informal, which will create a link, to be reinforced year after year, between national cluster organizations.

The purpose of this Network is to put the entirety of the European maritime cluster on the map. The size and the interrelation of the maritime sub-sectors should be clearly expressed, and the Network provides a platform from which joint activities can be started and developed. The Network should however not

replace the maritime associations which have essential specific responsibilities and historic lobbying structures well in place and are necessary for their members in many respects, for instance in the social fields. Yet, the network may become the channel through which trade organizations may – at least indirectly – be jointly active and support each other in their common lobbying matters. Apart from this, the Network could provide the necessary knowledge to underpin the sector needs.

Acting jointly one day in a real European cluster means that it will be easier to draw EU authorities' attention and, as a consequence, to deliver a general and common message. On the other hand authorities (start to) realize that individual sector policies might conflict with each other and that a more integrated approach should be preferred as stated in the blue book "An Integrated Maritime Policy for the European Union".

The Network can contribute to this integrated approach:

- a. by pushing the national clusters to gather the various maritime sectors of their respective countries
- b. by bringing really representative national clusters together by then
- c. by giving a homogenous presentation of each national cluster (common criteria, coherent turnover and employment data, i.e. comparable scope, number and type of each member-entity etc.).

Marcin Więckowski

Whizbrand Group
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Baltic Sea & Space Cluster as a strong brand in Baltic Sea Region

"If you think you're too small to have an impact, try going to bed with a mosquito."

– The Body Shop ad.

Great initiatives don't just offer a product or service or simply create a platform for cooperation. They have a point of view. They believe in something. They are willing to fight for that. And they show that to the world.

To build a great initiative, you need to stand for something. You need to feel that you're part of something important. That you're making a difference. This doesn't mean you need to find a way to act against mortality. It's just that you need to feel that what you do is truly valuable.

There's a huge difference between standing for something and just having defined mission statement, suggesting that you do. Standing for something should not be limited down just to writing – it's all about truly living the idea .

Building a meaningful brand for BSSC.

When you are willing to gain a success, you need to have a strong knowledge of what you are all about, and be able to prove that value and approach you offer is unique and different. Then, you need to distill this difference into a densely composed idea that enables to achieve a coherent vision and drive in everything you do. In other words: *you've got to build a brand.*

Competition has never been stiffer than nowadays. And the consumer's attention span has never been more challenged. When building an initiative you've got two strategic choices: Do what everyone else is doing, only better, cheaper or faster. Or do something different and truly distinctive.

Judging the books by their covers is one of our peculiar habits, whether we are willing to do so, or not. People listen through their stomachs, not their ears. If you connect with them on a gut level, they will trust you and give you a "go". If you don't connect with them on a gut level, you can't offer them enough details or statistics to bring them around.

The brand is not to identify – it is to differentiate!

You don't build a brand to identify your initiative. You build it to differentiate yourself from others. Strong brands are most often based on simple ideas that draw people in, that show that your brand is different from the others. Powerful brand ideas result in powerful and memorable branding. Thanks to these ideas, it is possible to create connections almost instantly.

Simplicity is the key.

Think about the smartest people you've worked with – your best teachers, for instance. They had the ability to take complex ideas and reduce them to simple notions. You remember these ideas and can apply them yourself.

The most powerful brands, whether big or small, are based on clear, gut-simple ideas. And they create powerful and memorable branding that expresses the brand personality, which in turn leads to invoking feelings, emotions and opinions. In this way, we are able to create the brand experience, making the brand idea itself – alive.

Let's build a strong brand for BSSC.

Space Sciences Committee Polish Academy of Sciences, Gdansk Branch in cooperation with Baltic Sea & Space Cluster

invite
for joint conferences

- 20th September, 2018
**Baltic Sea & (Outer) Space
New perspective for our region**
Instytut Oceanologii Polskiej Akademii Nauk, Sopot
- 22nd November, 2018
**Seaport + Space Infrastructure
Synergic Network under common management**
Wyższa Szkoła Administracji i Biznesu, Gdynia
- 19th March, 2019
**Autonomous ships
Inevitable reality at sea**
Politechnika Gdańska
- 18th May, 2019
**Institutional Cooperation at Sea & (Outer) Space
Essential adjustments needed to boost full potential**
Uniwersytet Gdański, Wydział Prawa i Administracji
- 19th September, 2019
**Remote-sensing
Challenges in gather and sharing data**
Instytut Oceanologii Polskiej Akademii Nauk, Sopot
- 14th November, 2019
**Sea and underwater drones
"Unidentified Sea Objects"**
Akademia Marynarki Wojennej, Gdynia

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