

Inter-networking Space Technology and Science : from “National” to “Global-Local”

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Since Space Era began, information and communication have undergone evolutionary changes, which reflected on the organisation of meetings, congresses and symposia by the space community. Most organisations were set up for “national” and “inter-national” structures. With the advent of global air travel, internet communication, and digital processing, local territorial and special interest groups have grown in importance in the structural evolution of academic and professional gatherings. In a way similar to commercial advertising, direct extended and targeted contacts between organising structures and participants are now feasible, leading to greater possibilities for a development of innovation opportunities and complex systems. A reflexion has started on shifting from an Inter”national” concept of operational information exchange to an Inter”regional” one, addressing directly Academia, Business and Industry at regional levels in addition to national relay organisations. However it appears that the term of “regional” may be understood in different ways in different socio-economic environments. Also many groups are no longer based on physical territories. It may be a good thing to stick to a well-known identities such as “ISTS”, but meaning of “I” could possibly be changed from “Inter-national” to “Inter-networking” for harmonious and powerful liberation of creativity in the “New Space” era.

Keywords : Inter-networking; World Space Symposia; Global and Local; Complex Systems, ISTS

1. Introduction : evolution of world space organizations

The first international space congress was organized in Paris in 1950 by Alexander Ananoff (Fig. 1.) with some 500 persons attending the opening ceremony at Paris University La Sorbonne, and only 17 persons thereafter for the technical sessions that were held at Ananoff’s home.

From a few dozens of participants in the early years, the attendance grew to a few hundreds of people after the Space Era actually began with Sputnik-1 and Yuri Gagarin. For many years, until the 1990’s, the audience was around or above one thousand participants. Since the year 2000, the audience has increased to about three thousand participants to reach 3700 participants at the Beijing meeting in 2013 and an all-time record of 5300 people in Mexico in 2016.

COSPAR, Committee on Space Research, was established shortly after the launch of Sputnik-1 as a bridge by which the nations of the world come to understand that cooperation not competition is essential to the future of humanity. Every other year COSPAR organizes a large congress in which space scientists from every nation and every discipline involved with space meet without impediment from geopolitical tensions or differences.

In Japan, ISTS has been the most popular meeting of space experts every other year since the first symposium was organized in Tokyo in 1959. There was a major evolution in 2015, with the Kobe symposium, when ISTS has almost doubled its attendance to about fifteen hundred participants, and most of all dramatically increased the percentage of non-Japanese participants to about 40% of the total audience.

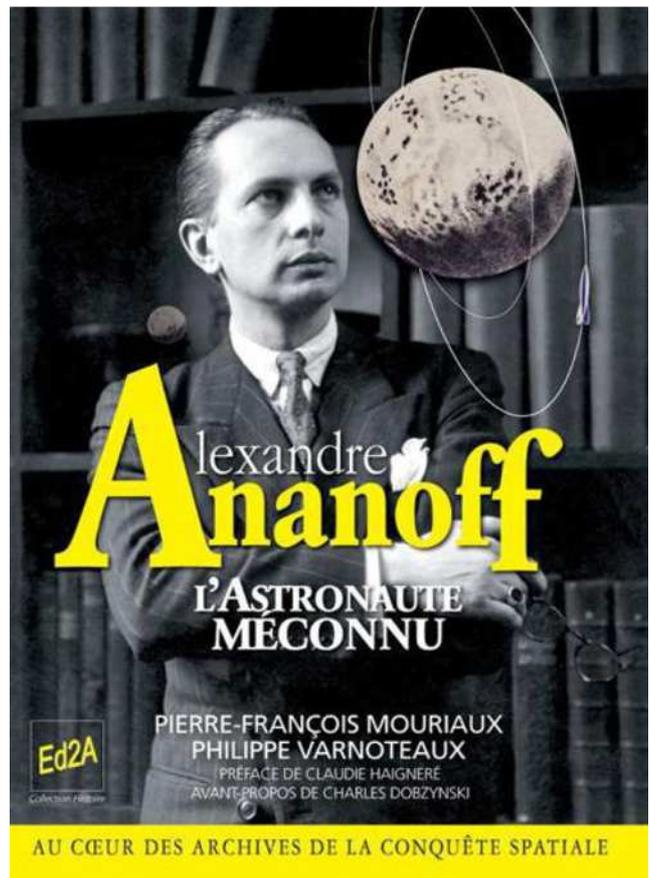


Fig. 1. Alexander Ananoff,

2. The emergence of new exchange technologies

Over the years, the operational context of the professional meetings have been profoundly modified with the evolution of new technologies for travel and communication.

Since the 60's, we are in a jet society where intercontinental travel (Fig. 2.) has become easy and affordable for all. At any time today, there are about three million passengers in flight.



Fig. 2. : Map of air traffic at a given time

The most dramatic change, exploding since the 90's concerns the transfer and handling of information, with the global use of the internet and the capabilities for processing, storing and sharing documents and other information.

Until the end of the 80's, participants would come to congresses with a full load of printed copies of their papers to share and distribute in the "paper's room". Later they were asked to provide in advance an electronic copy of the papers which were put together on a CD-ROM to be distributed to the participants. For the last few years, physical media have all together disappeared, and the contents are available on a website, for the participants and for the world at large.

So here is the new paradigm : people can travel almost as they wish to meet each other, and information travels as well, even more freely than people.

Then there is a question which was raised in the early days of the 21st century: is it necessary to continue holding physical meetings, and could every exchange possibly be handled exclusively by the internet ? The answer is neither yes or no, but entering a new dimension of complex systems.

Just as the book has not been killed by television or by the internet, the physical meetings have not disappeared because of the global electronic systems, they just have changed.

3. Towards "local-global" and regional territories

While new communication technologies were helping the "globalization" of organizations, at the same time they were giving tools, in every field of activity, for the development of regional and inter-regional management of exchanges.

Whereas before the internet the congresses would operate as linear chained organizations with relays at national levels and be a "center point", they now mainly serve real "networks" where the nodes are the persons, scientists, experts themselves and the congresses are the places where links are being built while actual exchanges are made through other means, at the

initiative of the concerned individuals.



Fig. 3. : The 270 Regions of the European Union

"The medium is the message" said communication guru Marshall McLuhan in a famous quote. Technologies tend to shape the structures that uses them. While the nation-state system was built on horse and iron-horse transportation for the industrial era, the current technologies favor the social organization at regional, state or prefectural level. The operators of those technologies, the "GAFA" are now global in nature, and address directly their billions of customers on an individual basis. If I type "Matsuyama" on a search engine, I can be sure that for the next few days or weeks, I shall receive more than plenty of advertisement for cars, hotels and whatever concerning Japan and Ehime.

This means that the ISTS organization, by using big data bases and similar algorithms may address directly every university, every chamber of commerce, every space interest group in the world, whether big or small, and no longer only national organizations as it mostly used to until now.

Small regions (hundreds of thousands or just a few million people) are now emerging as the main territorial entities for the operation of the world (Fig. 3.) and should be considered on their own. While the regional level can still foster sometimes unhealthy competitions and conflict, it offers much more flexibility than national level for adaptive projects based cooperation. In that view, nations could be considered as specific clusters of regions without disturbing the current relationship between world organizations and national level relay institutions.

4. The case of the Space Explorers

The new complex systems of communication not only facilitate and extend the possibilities for territorial based communication, but they also can handle easily non-governmental and non-territorial specific interest groups with global extension, and this questions the necessity to refer to territorial references, whether national or regional in the denomination of the global organizations such as ISTS.

In 1985, late astronaut Edgard Mitchell, who at the time was

living at Les Vaux de Cernay near Paris, invited some twenty of his colleagues from United States, Russia, France and several other countries to stay at his residence for a few days. After a proposal by astronaut “Rusty” Schweickart, they quickly came up with the idea of an association for people who had been in orbit around the Earth, the they spent a whole evening discussing about the name of the association, would it be the “International Association of Space Explorers” or just the “Association of Space Explorers” (Fig. 4.). In the light of “the Overview effect” they decided to drop any reference to nations. They felt it was no longer necessary.



Fig. 4. : Emblem of the Association of Space Explorers

5. Inter-networking and complex systems

This thinking about the meaning of the “I” in acronyms where initially it came as the initial for “Inter-national”, was fostered by practical experience within space groups at regional level in France and in Japan, when it was found that channeling through national levels could mean administrative circuits longer than necessary. On the contrary, working at regional levels could prove more flexible, harmonious and productive, while still allowing sharing with other regions and national level when useful.

This is when the benefit of “complex system” organization became clear. When confronted with the well-known concept of General Semantics that “we think with words”, it became also clear that the attention of major world space organizations could be called on the risk of “(inter-)national” labels in a rapidly changing world.

A complex system is usually composed of many components and their interactions. Such a system can be represented by a network where nodes represent components and links represent their interactions. Complex system such as the inter-networking approach offer a better context for innovation and progress beyond what classical linear centralized systems may give.

6. Conclusions for a new meaning of “ISTS” acronym

A logo has a very strong value of recognition, and a successful logo should not be changed easily. But the interpretation of the initials in the acronym may follow the evolution of times and context while preserving the strength and the harmony of the symbol.

This is a humble suggestion that the reading of the acronym ISTS (Fig. 5.) may evolve to :

“Internetworking Space Technology and Science”



Fig. 5. : Logo of ISTS

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