SUCBAS & MARSUR Networking

There is no "One cooperation fit's it all"

Joachim Beckh

Economic growth is essential to society. Some countries are able to reduce energy consumption and have economic growth; others depend on higher energy consumption. The world's economy growth principle pushes the energy demand to the threshold of limited resources with increasing environmental impact. When abuse of the environmental system lasts long enough, the result can backfire on world economy; examples in history show the growth followed by saturation, turning into a catastrophic decline, and ultimately destabilising the bases of our culture and political systems.

The principle of infinite growth in a finite planet is fundamentally flawed. Although no precise conclusions or quantitative assessments can be made with respect to the global oil resources, the critical imbalance between the baseline demand and the remaining resources seems foreseeable for around 2030. More than four hundred nuclear power plants account for ~14% of the world's demand for electricity. Renewable energy resources such as sun, wind, rain, tides, and geothermal, are naturally replenished, and cover ~16% of the global energy consumption.

Ocean energy resources include non-renewable energy sources such as oil and gas, as well as renewable energy sources, such as offshore wind energy, wave energy, ocean current energy, offshore solar energy. Oceans have always been part of strategic planning, and constitute important elements in many political and/or military conflicts.

Shortage or pollution of fresh water causes worldwide health problems and damage to biodiversity. 96.5% of our planet's water is found in the oceans, which absorb about 30 per cent of carbon dioxide produced by

humans, but their ability to reduce the impacts of global warming is steadily decreasing. At the same time oceans serve as the world's largest source of protein, with more than 2.6 billion people depending on the oceans as primary source of protein. Over three billion people depend on marine and coastal biodiversity for livelihoods, coastal resources and industries.

In order to safeguard and protect the fragile maritime environments and limited resources various cooperation initiatives have been taken around the world. Cooperations are enhancing the communication between the partners. They enable crises management with the exchange of information on a need-to-share principle. Among two of the most successful cooperations in Europe are the Sea Surveillance Cooperation Baltic Sea (SUCBAS, http://www.sucbas.org) and the Maritime Surveillance Networking (MARSUR, http://www.marsur.info).

Gaining trust is a reward for responsible behaviour; a positive indication of cooperation is communication. The exchange of information to develop trust is fundamental in human social behaviour, and in any cooperation. It is a key issue in conflict development as well as in conflict resolution. People build influential social, political, financial networks to share ideas and expectations by exchanging information. Our behaviour must therefore be in accordance with our shared ideals, ideas and expectations.

Trust requires dependability and communication in order to achieve knowledge about a specific situation. In some situa-

tions national or cooperation security reasons may object to the release of certain information due possible harm, danger and/or damage involved.

Sensitive information shared by partners represents the trust in our behaviour and security measurements. We need to find balance between the concealing and sharing of information while at the same time having to avoid the impression of masking the truth. It is a balance on a tight rope!

Technological developments change our daily life, society, politics, and conflict management. The wireless radio telegraph invented in the last half of the 1890s played a first decisive role in naval battles in 1905; in 1910 nearly all nations had their naval vessels equipped with radio stations. A century later stores worldwide sold just a thousand wireless systems every 60 seconds (iPhone, 2011).

Crises, conflicts and needs have always been the parents of inventions; the fields of command, control and communications (C3) being their unloved stepchildren. In the past military developments have been the pacemakers for civil products. Today the rapid technological developments make it nearly impossible to follow with fielded equivalent products for military use. Communication and information systems (CIS) are key support element of various civilian and military missions – ranging from human conflicts to natural disasters. In the European maritime environment one finds a vast collection of CIS projects, concepts and developments. While civilian stakeholders have rather large budgets available for research and developments, the military community has comparably marginal financial resources. The success of any concept, the related

Author

Joachim Beckh is Technical Point of Contact (POC) for the German Navy and Chairman of the SUCBAS Technical Working Group, Tech POC in the MARSUR Technical Working Group (MTWG) and the NATO Maritime Information Services Technical Working Group (MTWG) for MCCIS and the project TRITON; in addition he is part of the Technical Expert Group for the Maritime Security Center in Cuxhaven, Germany.
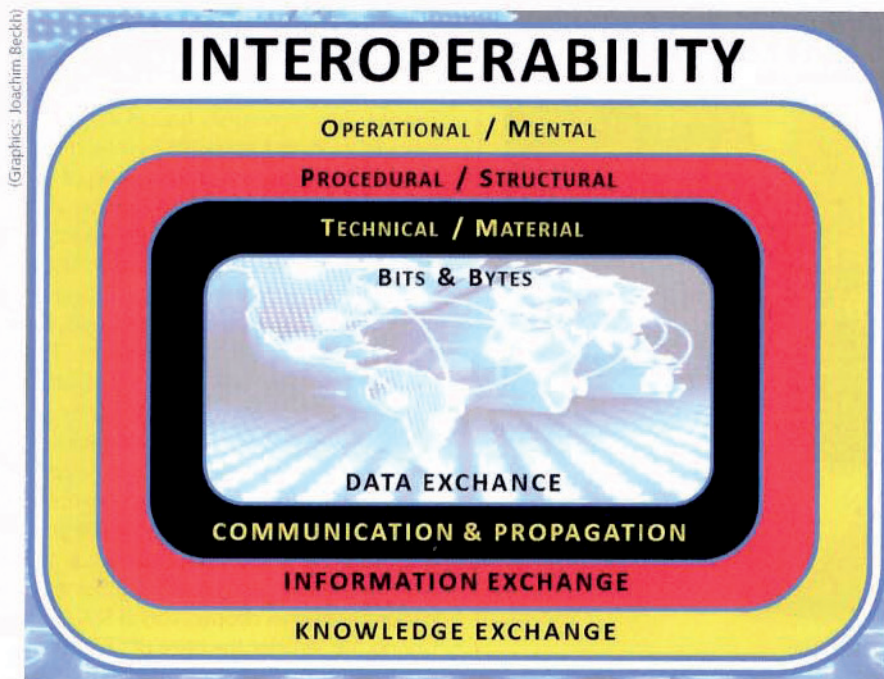
Aspects of Interoperability

project, and final developments, however, will only be measured by their effectiveness in operational use; and not by their financial budget.

Information advantage or information superiority requires knowledge on how people process information, how they think and turn their thoughts into decisions and actions. This decision cycle depends on the very individual thinking skills and styles, on intellectual capabilities, culture, personality preferences, and favoured ways of processing, absorbing, storing, and using

information, knowledge and objectives. The establishment and maintenance of good will, and understanding is arguably the most important factor in networking. People being the key to success must be in the centre of attention in any policy, and with this in mind SUCBAS and MARSUR are born of two essential components; the human relations established and the superior technology developed. A joined, combined approach in command and communication is key to success in any mission and/or operation.

Two of the most advanced concepts and developments in the maritime domain of the European navies came into operation with SUCBAS and MARSUR. Relations, similarities, differences of technical development and concept, as well as in the number of users, the community members and their aims can be found in the projects. However, the most important commonality is the interfacing of the existing national resources. SUCBAS and MARSUR are low-cost solution using services from national systems already existing. Open source software and developments from the NATO Open Source Initiative, the NATO TIDE Sprint, and experiences from the Coalition Warfare Interoperability Exercises (CWIX) are brought to life in these cooperations.

SUCBAS and MARSUR are related to the concepts of Network Enabled Capability (NEC), NATO Network Enabled Capability (NNEC), and European Network Enabled Capability (EURONEC) of the European Defense Agency (EDA) or the civilian equivalent of the Common Information Sharing Environment (CISE). The names might be different, but they all have the same and simple idea: "People exchanging information based on mutual interests and trust".

Maritime Surveillance (MARSUR)

Following a directive by the EU-Defence Ministers in late 2005, EDA in September 2006 launched the Maritime Surveillance-project (MARSUR), with the aim to create a network using the existing naval and
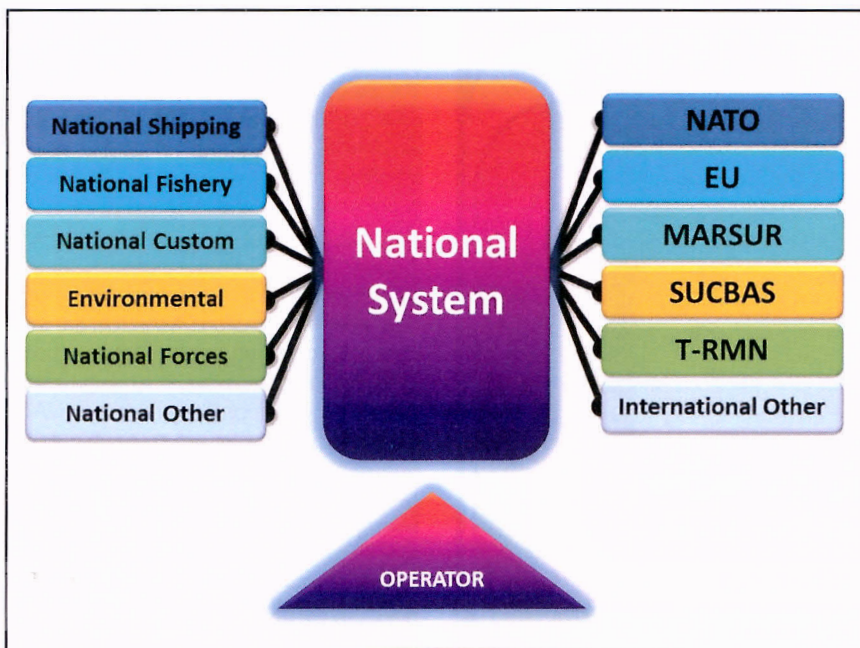
Challenges in Networking

maritime information exchange systems of Belgium, Cyprus, Finland, France, Germany, Great Britain and Northern Ireland, Greece, Ireland, Italy, the Netherlands, Malta, Poland, Portugal, Spain and Sweden. The interfacing of independent systems from Italy, Finland, France, Great Britain and Northern Ireland, Spain and Sweden was demonstrated during the Distinguished Visitors Day (DV-Day) on 30th June 2011. The success of the event clearly proved the capabilities of the chosen federated system-of-systems approach.

MARSUR connects naval headquarters and their national system via the "MEXS" (MARSUR Exchange System) unique designed interface. These interfaces enable secured cooperation over the internet and ensure interoperability with minimum required changes to the individual national system. The MARSUR Technical Arrangement (TA) for the "MARSUR Live Phase" was signed on 27 October 2011 between the 16 EU Member States Belgium, Cyprus, Finland, France, Germany, Great Britain and Northern Ireland, Greece, Ireland, Italy, Lithuania, the Netherlands, Poland, Portugal, Spain and Sweden. These countries were later joined by Latvia (10 April 2012), Bulgaria and Norway (08 June 2012).

The maritime surveillance project by the European Defense Agency has matured to the "Maritime Surveillance (MARSUR) Networking" within the whole European Union. A EU Category-B project was proposed by Finland to secure past investments, enable development and improvement of the MEXS, and to widen the cooperation. On 11 October 2012 the twelve EU Member States Belgium, Cyprus, Germany, France,

Finland, Great Britain and Northern Ireland, Greece, Ireland, Italy, the Netherlands, Spain, Sweden and the Non-EU Member Norway signed the MARSUR Project Arrangement (PA).

Sea Surveillance Cooperation Baltic Sea

The SUCBAS Letter of Intent (LOI) was signed by Denmark, Estonia, Finland, Germany, Lithuania, Latvia, Poland and Sweden on 30 March 2009. The SUCBAS organisation consists of the SUCBAS Steering Board (SB), followed by the SUCBAS Coordination Group (CG), and the two branches of the SUCBAS Technical and the Operational Group.

The technology in support of SUCBAS is directly connecting the national systems of each naval headquarters without additional interface as in MARSUR. While interoperability in MARSUR is ensured by the adaptation of the national systems to the respective MEXS, in SUCBAS the national system needs to be adjusted to the hard- and software solutions, standards and protocols. Operational procedures and technical developments are agreed on in consensus; the SUCBAS Technical Group has established an internal Configuration Control Board (CCB) for the Interoperability of the Baseline Versions.

On 18 of December 2011 the SUCBAS community took a big step forward by initiating the automated exchange of information. Since then participants can share data automatically in real time, notify special interests or potential dangers detected in the Baltic Sea. As alternative communication,

and as a backup in case of automation failure, the manual exchange of daily reports, chats, and e-mails is still in operation.

The SUCBAS community hosted a seminar from 14 to 15 of March 2012 on Maritime Situational Awareness at the House of Estates in Helsinki/Finland. The seminar was based on the will of all SUCBAS nations and the decision of the SUCBAS Steering Board to facilitate Food-For-Thoughts (FFT) from organisations, nations and the individual participants and speakers. The focus of the event was based on building trust and strengthening the established relations between the different stakeholders. Further aims were to emphasise the overall importance of the safety and security of the seas, the importance of civil and military cooperation, the global responsibilities in the maritime domain, and promoting the capabilities of regional cooperation in SUCBAS. During the seminar the prize of "Maritime Actor of the Year" was awarded to the Baltic Sea States Council.

The Necessity of Multiple Cooperations and Networks

In spite of all security efforts our information society and cooperations are fragile human creations; they do not cope well with abuse and will only work as long as everybody plays nice. We are experienced in building sophisticated social and technological networks, but poorly prepared for managing and safeguarding them. The Sea Surveillance Cooperation Baltic Sea (SUCBAS) and Maritime Surveillance (MARSUR) Networking are just two maritime cooperations among many others trying to cope with maritime challenges, resource management and dealing with possible threats of the ever changing oceanic environment. Security cannot be viewed as a final and finished product, it is an everlasting process.

Motivating factors for the vast numbers of global, regional or local collaborations, all with their own security concepts and networks, are diverse environments, politics, economics and interests. Each of these social and technological networks represents a unique information cloud, and various interacting collaborations are forming a global information space; the Global Common (NATO Definition).

Building trust means to accept the differences of our partners, it requires multiple collaborations; there is no "One cooperation fits it all". We need to build trust with individual partners, in diverse environments, supported by verified commitments in cooperations like SUCBAS and MARSUR. ■