MN Projects Governance Model – Driver for Change in C4ISR Pillar of NATO and Nations

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Introduction: Role of C4ISR as glue for operations and driver of transformation. C4ISR (Command Control Communications Computers Intelligence Surveillance Reconnaisance) is more and more considered as glue for operations and transformation. Development of C4ISR projects in NATO has a long history correlated with the history of NC3A (NATO Consultation Command and Control Agency), starting with common air defense in 1950's up to current days with Afghanistan Mission Network and implementation of the Comprehensive C4ISR Approach. Recently there are emerging opportunities for bilateral and multinational projects in addition to common funded activities.

The real challenge for NC3A is to enter proactive mode and to work on internally driven bilateral and multinational projects, based on more than 55 years of experience in C4ISR area. Based on this analysis the paper focuses on the governance of multinational projects in C4ISR area. In this new environment there is a new and important role of national industry and R&D bodies in shaping of NC3A driven multinational C4ISR projects. These developments in the framework of NATO Network Enabled Capabilities (NNEC) vision based on "Interoperability in Secure Environment" are in line of C4ISR support to the Comprehensive Approach, accepted recently as a key concept for NC3A operation to contribute to NATO success, including through closer cooperation with partners – nations and organizations (EU on first place).

NATO NEC is a key concept of transformation that actually was implemented directly in operations through AMN and proved the key role of C4ISR for the success of NATO.
In order to understand the challenge of MN (multinational) projects in addition to the role of C4ISR for operations and transformation we will analyze the process of funding for NC3A (principal C4SIR executive arm of NATO), that led to the establishment of Cooperation Development function in the Agency, which logically defined MNPI (MN projects initiative) as one of its main priorities.

MNPI faces serious governance challenge in all three phases as defined by CD (cooperation development) Strategy, which is the focus of the second part of the paper. As a logical conclusion MNPI drives us to the issue of relations with Industry and R&D community on National level, considered to be key players together with Government and security sector.

Changes of NC3A funding model and evolution of cooperation development function. NC3A is a result of merging STC (funded by MB) and NACISA (based on NSIP funding) in 1996. Later in 2000 customer funded model was introduced, that together with the NATO enlargement and internal development added as customers the Nations and NATO organizations besides two Strategic Commands. This trend of extending the customer base led to situation where partner nations were added, MN projects appeared, under NRC even Russia was added as customer and recently civilian organizations, Eurocontrol as an example (EU is also a customer with great

potential of growth). Further evolution of the cooperation development efforts covered organizations of the larger security sector, outside Armed Forces / MoDs.

Shortly NC3A started with 100% common funded with approximately 50/50 ratio between military budget (MB) and NATO Security Investment Program (NSIP), when it comes to Project Support Cost (PSC), but of course NSIP is contributing a lot more to the investment part of the projects. Currently we have civilian budget (CB) contribution, national, multinational (both NATO nations and partners) and even from other multinational organizations, as well as non military customers. About 20% of funding is outside two strategic commands and IC, with trend and opportunity to reach at least 40 % in next 5 years [5,6].

This is already a different Agency and, as a matter of fact, serving to a different NATO. When strategic partnership with two strategic Commands and IC is essential for the success of NC3A (and NATO), more and more CD efforts with many other (more than 100) customers are as much important for NATO success. Even more – CD activity is not isolated from partnership with the Strategic Commands and IC, because NATO nations are represented and decide in SCs and IC, as well as non common funded projects are natural extension of the common funded projects and vice versa [3].

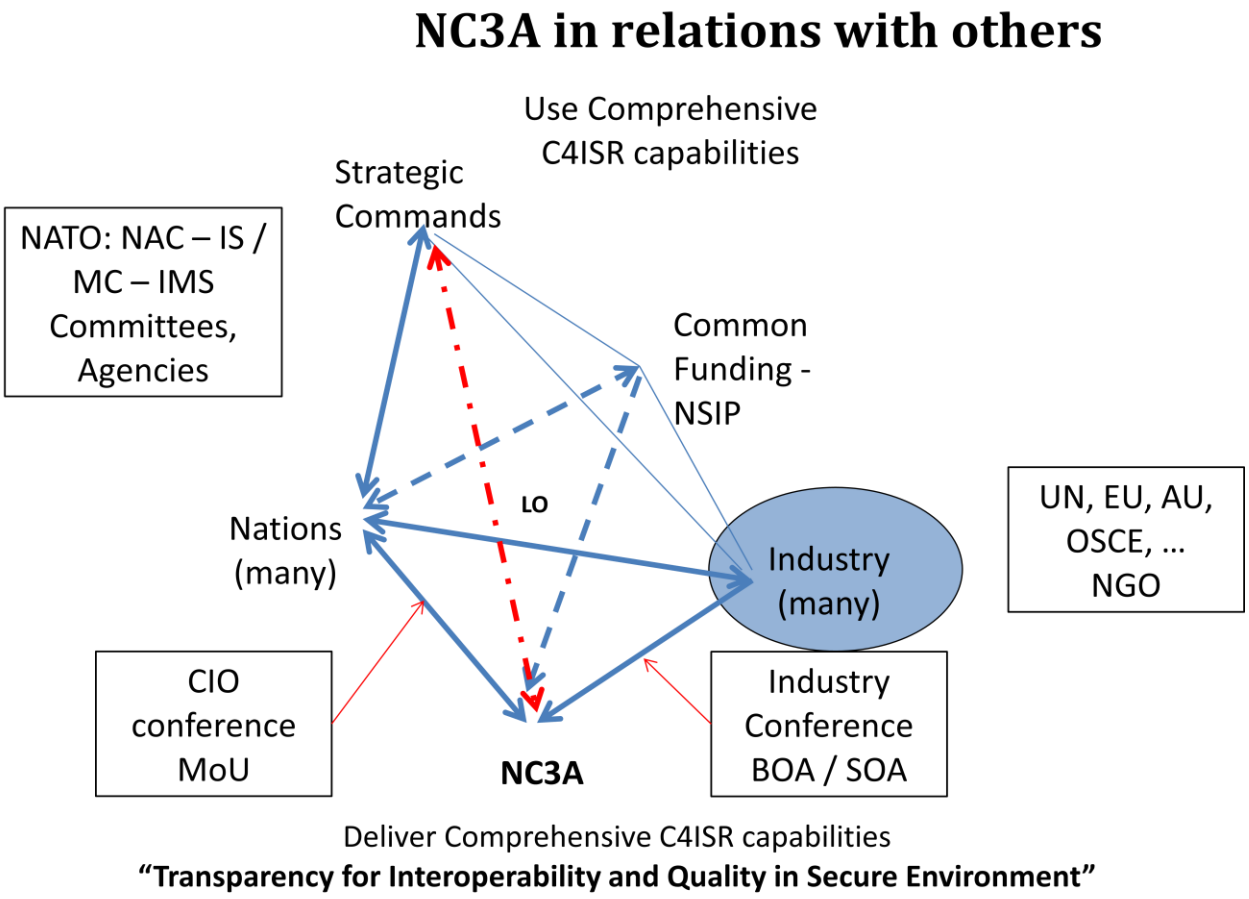

Fig. 1. Relations between NC3A and partners in C4ISR capability development.

Last, but not least this developments are core for the shift of paradigm, introduced by new GM of NC3A – Mr. D'hollander, that clearly stated his believe: „NATO is Nations" and we better pay once and develop solutions that provide embedded „Interoperability in secure environment", than to pay once on national level and after that on NATO level to bring national solutions together in NNEC [5,6]. In this new paradigm National Industry and R&D bodies play more significant role as well. In the new environment NC3A operates with many partners around – **fig. 1.** When relations with the two strategic commands (SC) and Infrastructure Committee (IC) are one to one (maintained by liaison officers / offices – it is the case with commands of operations as well – for example ISAF, KFOR and in the past IFOR/SFOR, others), the relations with Nations and Industry is one to many [6]. Last requires new approaches where directorate „Sponsor Account NATO and Nations" and Chief Technology Officer (CTO) play greater role. Instruments as MoU, Cooperation Agreements (CA), Basic Ordering Agreements (BOA), Standing Ordering Agreements (SOA), CIO Conference and Industry Conference are used to maintain relations.

Cooperation development strategy and role of MNPI. CD strategy is based on the evolutionary developed opportunities and clear vision that future of NATO is related to the Comprehensive Approach (CA), closer relations with partners, addressing emerging security challenges, extending of NATO mission to Territorial Missile Defense, as well as, optimal combination of common, multinational and national funding in support of NEC, that require interoperability in secure environment [1,2].

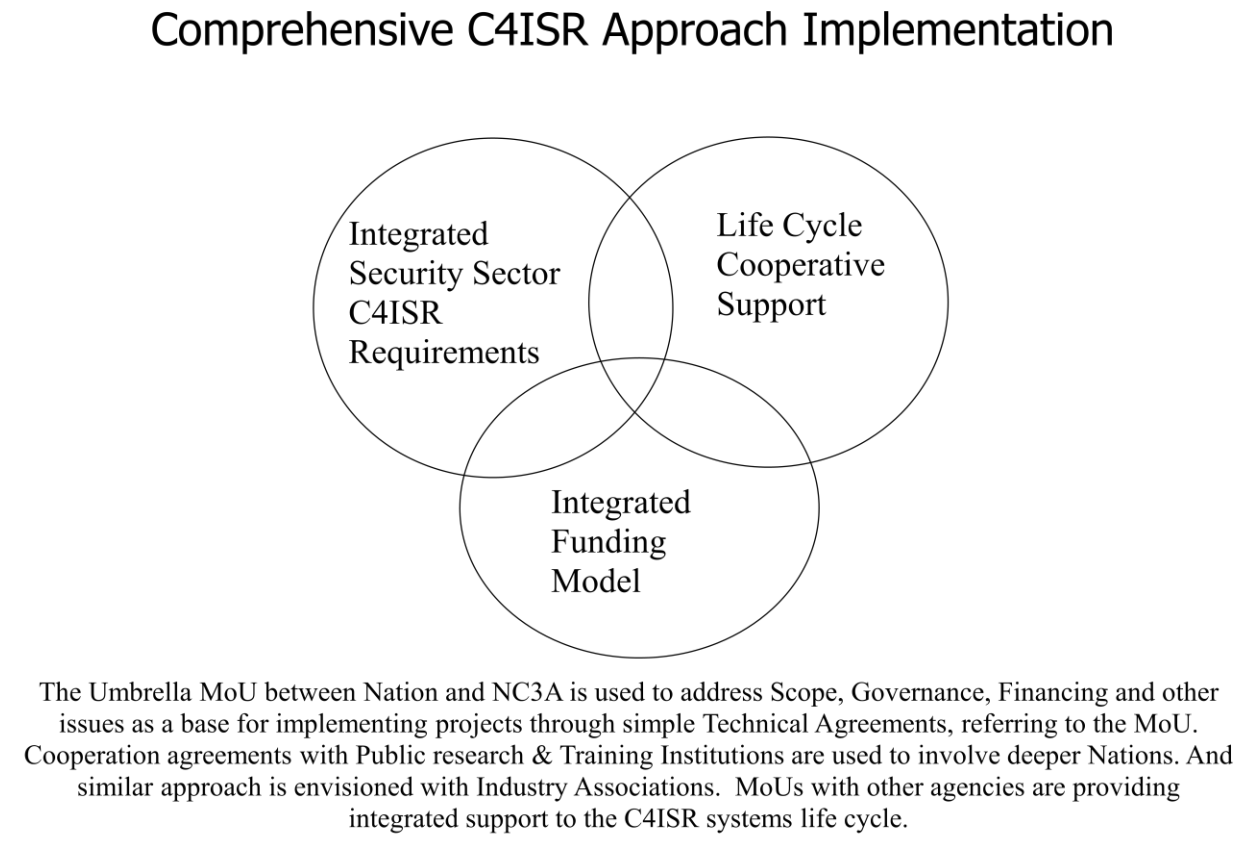

Fig. 2. Three pillars of the Comprehensive C4ISR Approach.

CD Strategy is based on the Comprehensive C4ISR approach (C2A) that defines customers, partners in LCS of C4ISR capabilities and sponsors (funding models) – **fig. 2** [3].

Key for the implementation of the strategy is analysis of the core competencies of NC3A, presented in the NC3A C4ISR Catalogue, where in addition to C4ISR competencies themselves, other two areas are covered – acquisition and project/portfolio/program management, as well as, financial, legal, and other shared services [4].

CD Strategy is based on three main lines of business:

1. Research on and procure of capabilities for NATO (MB, NSIP)
2. Transfer of NATO developed solutions to Nations / other organizations (CB, National funding, Trust funds)
3. Support to multinational development of C4SIR capabilities in NNEC framework (MN funding)

In this sense CD Strategy implementation could be explained as several waves of deployment of tools, applied to customers, NC3A and other stakeholders of C4ISR development process for NATO.

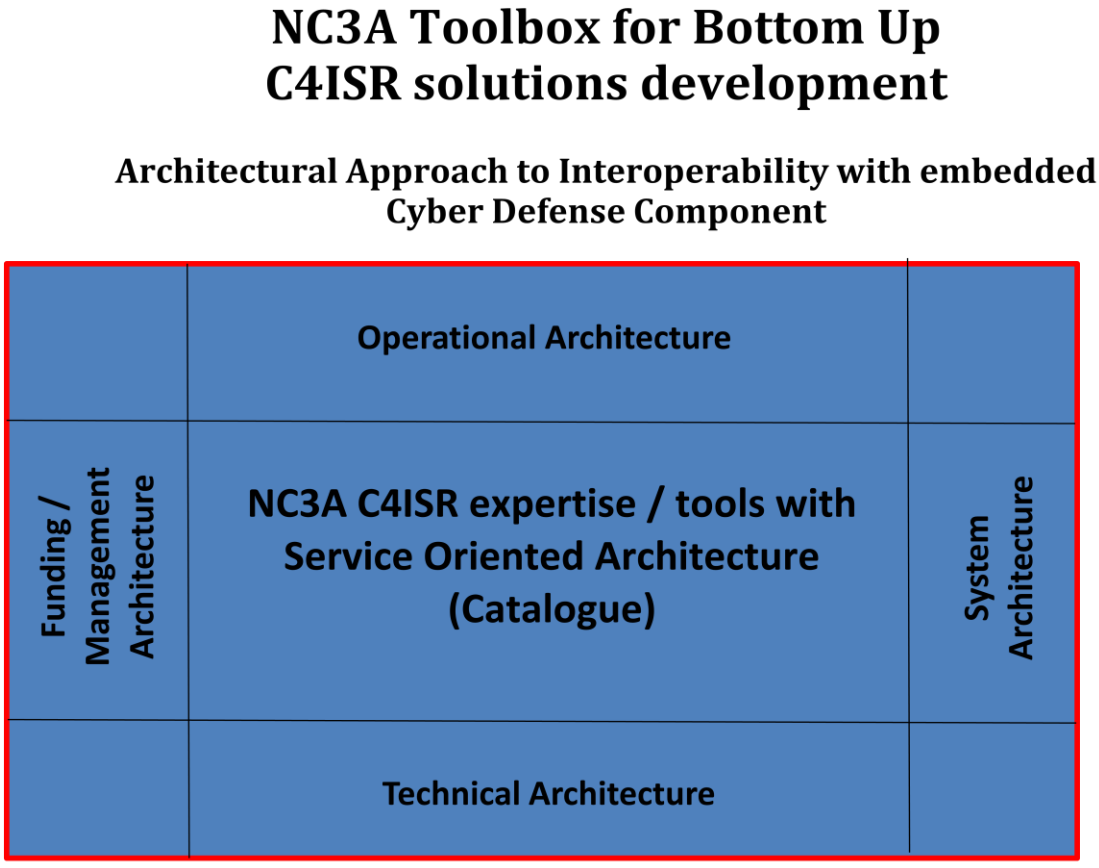

Fig. 3. Architectural approach with the toolbox of NC3A to provide tailored solutions.

First wave of implementation of the C2A is development and signing of different agreements as:

1. MoU with Nations (both NATO and non NATO) as well as customer organizations;
2. Cooperation agreements with R&D bodies
3. BOA, SOA with industry and NDA for pre-procurement collaboration
4. Partnership agreements with agencies contributing to LCS of the C4ISR capabilities
5. Funding agreements if special funds are established for execution of the C4ISR projects

MoU is of critical importance, because it identifies areas of cooperation, but more importantly governance mechanism based on Senior Representatives, Focal Points, NATEX, and community of people on both sides and leads to the development of an Action Plan, potentially to annual POW in implementation of the MoU [3].

Second wave (practically these two waves are overlapping) is based on development and presentation of the NC3A C4ISR Catalogue. This wave supports implementation of the C2A by providing a toolbox used through architectural approach (Service Oriented Architecture – SOA / Enterprise Service Bus – ESB) to deliver just in time solutions to different customers in cooperation with other agencies and industry (**fig. 3.**).

Based on achievements of these two waves to prepare the customer and NC3A – the third wave is focusing on projects under key lines of business: common funded customers, Nations / Organizations, MN projects. This paper is focused on MN projects, which are at least three classes:

1. Classic (group of NATO Nations or in some cases including partner nations)
2. Regional cooperation (group of nations from certain geographic region)
3. C4ISR Integration Fund (for new NATO members, partners, transition programs as in Afghanistan, Kosovo)

In some cases international organizations (IO) could be treated as organizations, or as MN project (if the role of nations is higher than the common body of the IO).

Above description outlines CD strategy from NC3A prospective. In many cases real CD strategy has two sides – for NC3A and for the Customer (Nation or organization). There are 3 strong examples to be mentioned for the role of nations.

First - Sweden accepted its own strategy to use NC3A as first choice partner for C4ISR capability development – this is very meaningful sign, having in mind that Sweden is a EU member and a partner to NATO.

Second example is from Bulgaria – the country amended its Public procurement law to recognize opportunity to use NATO bodies (incl. NC3A) as sole source solution in the area of NATO related capabilities development. In the last case we have to mention the political will in current MoD leadership to maximize benefits and fulfill all the commitments of NATO membership on one side and the preparation made in the last 5 years under SfP981149 and SfP982063 as well as many other ARW, ASI, ATC projects co-funded by NATO and Nation for the best use of the opportunities, given by cooperation with NC3A [7].

Third – following the success of MAJIIC MN project many of the experienced NATO nations consider MN projects as a key enabler for critical capabilities development in addition to the well established national programs and common funding programs.

Challenge of NC3A initiated MN projects. In the past (and recently) NC3A is involved in a few MN projects, initiated from NC3B, or group of Nations, or ACT, or NRC – shortly from outside the Agency [5]. Currently with the new developments in capability area (including the intrudiction of the New NATO Defense Planning Process – NNDPP) and new lines of business for the agency, the NC3A is in position to propose to Nations effective mechanism to start new MN projects. This opportunity comes with many challenges to define the process of generating new MN project, establish adequate governance structure (to include decision making, project/program management, funding, accountability and integrity of the process) for the different phases and as a whole, as well as to define the role of National industry and R&D bodies (in the past they were involved through procurement, but not in the pre-procurement phase that is now essential for the success of the MN projects).

Process of initiating NC3A supported C4ISR project includes 3 phases (**fig. 4)**:

1. Feasibility study phase
2. Preparation phase
3. Execution phase

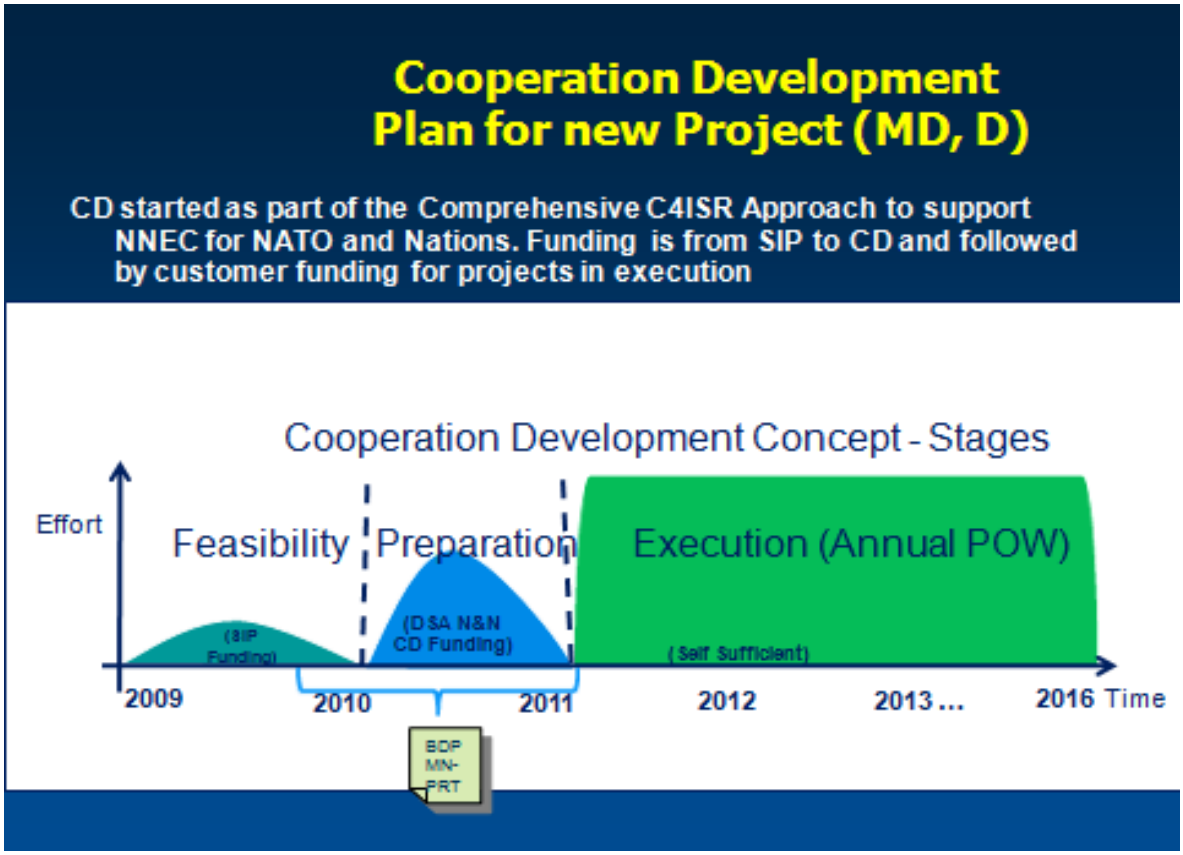

Fig. 4. Phases in the MN CD process to start new MN project.

Feasibility study is based on analysis of the customers' needs and competencies of the Agency to support collaborative capability development in priority area. It is to develop business case for NATO, for Nations, for NC3A, for Industry. It takes 6 months to one year and requires about 20 K Euro, based on our recent experience (currently funded by strategy implementaiton program (SIP) budget line in NC3A).

Preparation phase is a key one to link together all stakeholders, define the framework and achieve commitment of the critical number of funding and contributing Nations (**fig. 5**). It takes up to one year and requires more than 100 K Euro to be able to move to the next phase. Currently we use CD funding to support the work.

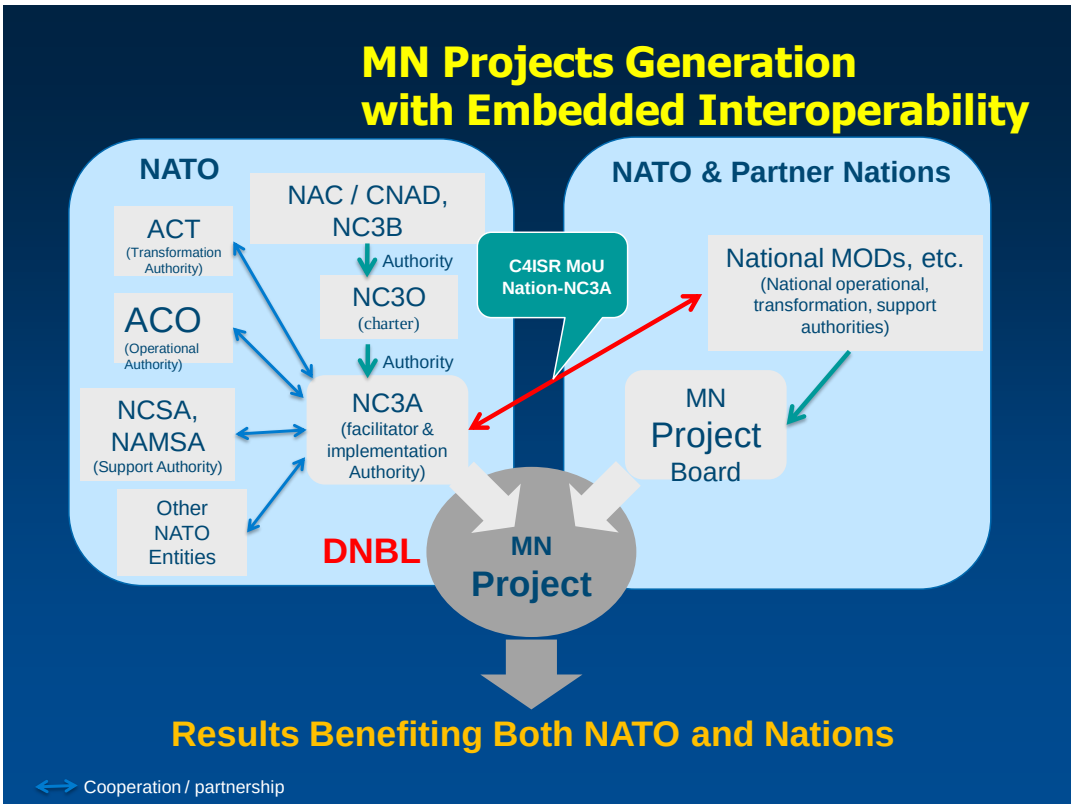

Fig. 5. Coordination process to start new MN project, initiated by NC3A.

Execution phase is expected to be at least 5 years and deliver capabilities through spiral development model. It is expected every project in execution phase to contribute back to the fund for MN CD, supporting previous 2 phases for the next projects. It means that MN CD Fund has to be run as a revolving fund with initial investment from SIP and CD budget for about 3 years and after that to be sustained through surcharges from the generated MN projects.

Governance of phase 1 and 2 is under MN CD Coordination Council (CC) and governance of phase 3 is under Steering committee of contributing nations.

Management in phase 1 and 2 is through MNPI project, run by Principal Business manager in NC3A, supported by the future PM and her/his team.

Management of execution phase is through MN Project/Program office, established in NC3A. Funding of phases 1 and 2 is from the MN CD Fund (recovered in future from the successfully executed projects) and funding of phase 3 is through the contribution from participating nations under decision of the steering committee, but managed by the Financial Controller (FC) of NC3A.

PO and FC could accommodate in kind contribution under the guidance of the steering committee.

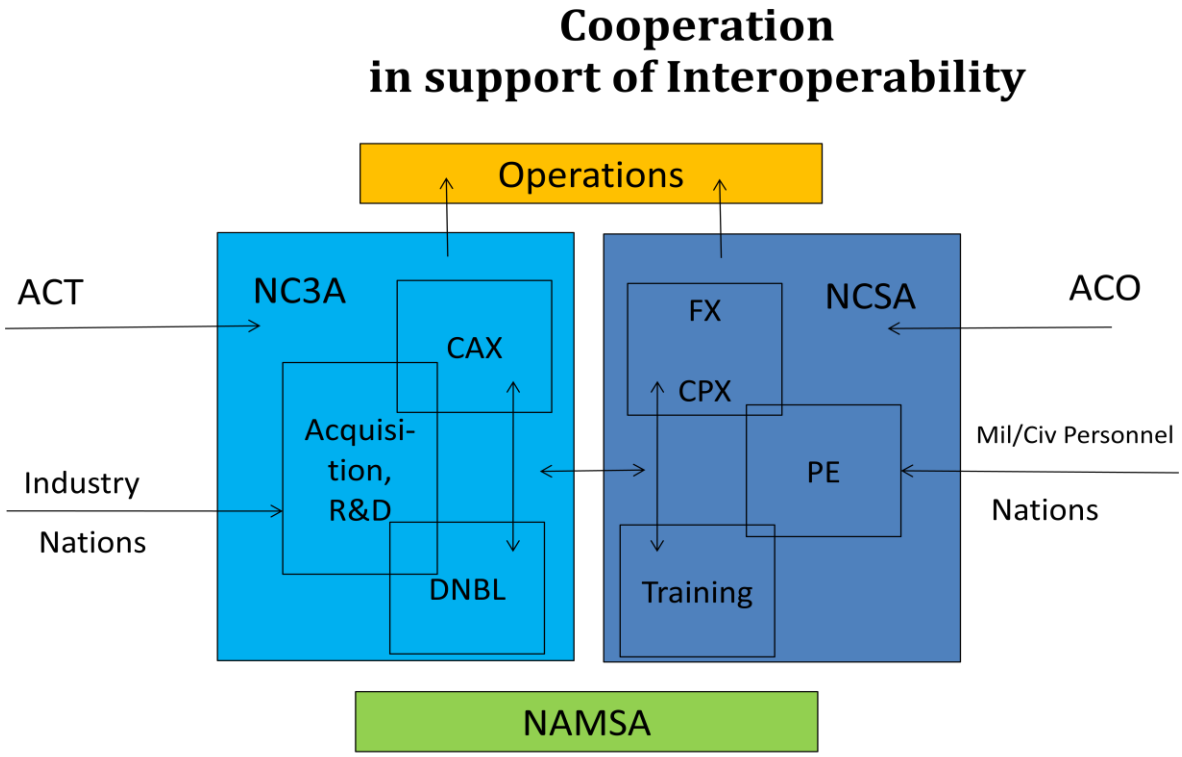

Fig. 6. Cooperation of different organizations in development and fielding of MN projects.

This model contributes to interoperability because involve all key players – ACO, ACT, Operations command, NC3A, NCSA, NAMSA and of course Nations, contributing personnel (PE) to NCSA and industry solutions / funding to NC3A (**fig. 6.**).

The cooperation model is applicable for common funded and for the multinational projects. When it comes to national projects, NCSA is replaced with the national CIS structure.

Currently the analysis of ongoing projects with ACO, ACT and IC as well as experience in supporting nations provided basis to develop an initial structure of MN projects to be proposed to Nations as presented on **fig. 7**.

Central role of this structure is given to Command and Control projects, surrounded by projects on architectures, planning, cyber defense, ISR, communications & core services. Common base

to support these projects is provided by Combined Federation of Battle Labs Network (CFBLNet) and its extension Distributed Network of Battle Labs (DNBL).

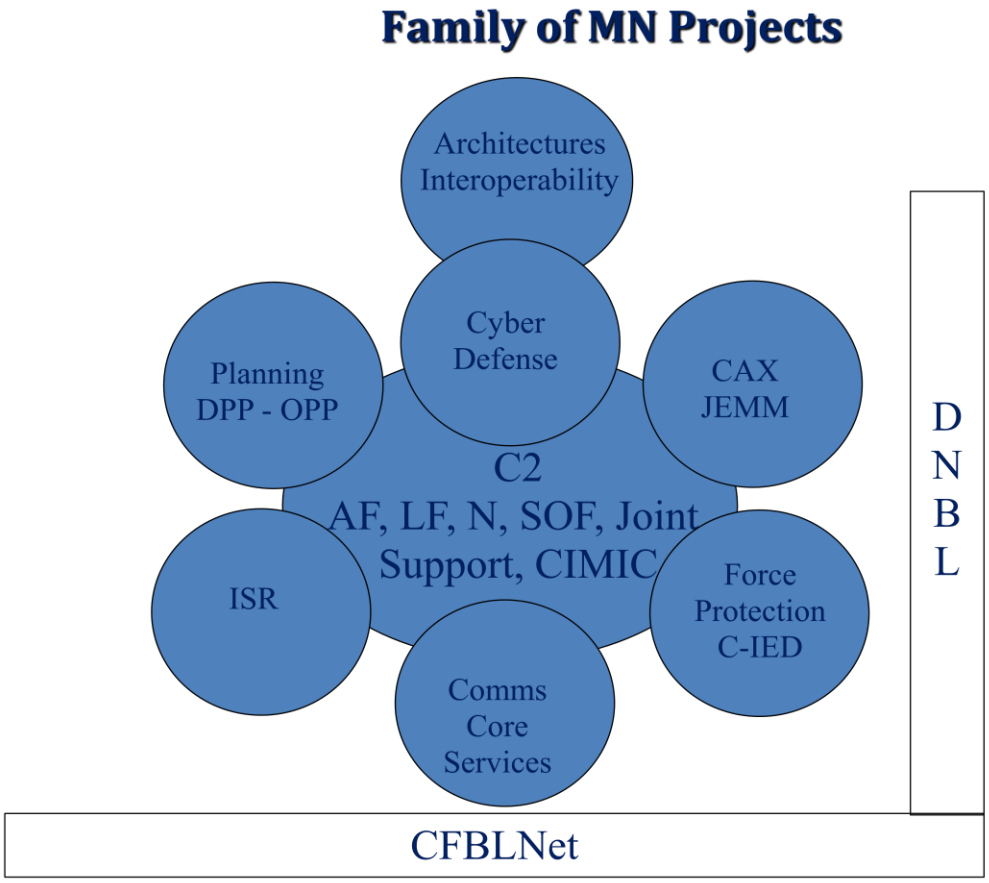

Fig. 7. Structure of key MN projects to support Interoperability solutions for Nations / Organizations.

One of additional benefits for Nations is that they could now join these MN projects on bilateral basis with NC3A and will receive all the advantages of using CFBLNet/DNBL and working in MN environment, synchronized with the NATO common funded programs environment.

Conclusion: Role of National industry and R&D bodies in the development of NC3A MNPI. NC3A as C4ISR procurement agency is unbiased and non-competitive to industry. As R&D agency it is interested in pre-procurement collaboration in defining the architecture options for future capabilities, to be developed by industry under MN projects in a way that will exploit best available solutions to provide to Nations NNEC in short time, low cost and large industry participation under fair competition.

NC3A Industry conference will be more and more focused on not just informing industry and research community about future common funded projects, but on explaining the role of NC3A in implementation of national and multinational projects, including for IO, where the role of

industry in the pre-competitive phase (feasibility study, preparation and even first steps in execution phase) is essential for success.

Of course to keep its unbiased status, involvement of NC3A in pre-procurement phase has to be covered by common funding (MB or CB and even NSIP). Participation of National industry or R&D bodies is national responsibility.

As mentioned, the use of CFBLNet / DNBL and system of exercises (to mention Combined Endeavor, CWIX, operational exercises led by ACO (incl. CPX and FX in addition to CAX) and many national / regional exercises) is of critical importance to develop of interoperable solutions in secure environment, cooperating with SC, NATO agencies, Nations – both government institutions and industry / research bodies.

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