

2018 TIDE H•a•c•k•a•t•h•o•n Handbook



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In the participants' words ...

"Hackathon has proven particular useful to work across organisational boundaries without bureaucratic overhead.", Archimates

"EA Hackathon provided a great networking opportunity", FRONT



"The event was challenging but at the same time fun. The possibility to interact with people from different backgrounds but also bringing products and experts from the industry gave valuable insights.", Matchless

"The team all enjoyed the experience, feel we have learned a good amount around ways of working ... We have certainly made some connections which we hope to begin to share information or practise with over the future", APATE



"... the atmosphere of the event was so friendly and encouraging that everyone had the possibility to achieve the maximum performance on it.", Icebrakers



"... it was great time and experience for our team and an opportunity to meet fantastic people who shared their very interesting ideas.", FRONT

"The logistic and general arrangements for the event were excellent. Thank you to the ACT team and to the Sponsors", The MODellers





How to read TIDE Hackathon Handbook

PART ONE of the TIDE Hackathon Handbook describes the key elements and process of TIDE Hackathon. It should be consulted by anyone interested in learning what TIDE Hackathon is, how it operates, and what are basic rules and regulations directing its execution. Appendix A to the PART ONE introduces TIDE Hackathon Framework and explains how NATO, partner nations, industry and academia may leverage it.

The details of the upcoming edition of TIDE Hackathon are covered in the PART TWO of this document. PART TWO covers logistic information, specification of the challenges and read-ahead reference materials. This is an essential read-ahead for all the TIDE Hackathon participants and should be studied before the event.



“Creativity is contagious, pass it on” – Albert Einstein



PART ONE

Preface

In the response to the dynamically changing geo-political environment that we face today, NATO conducts a process of continuous transformation guided by a high level political agenda. Bringing effective change to such a large organization is however, a complex endeavor. It involves many actors, and typically is accompanied by water-fall type, lengthy procurement processes. This significantly hampers innovation, especially in the area of Information and Communication Technology (ICT) where rapid agile methods have been proven to be much more effective.

In order to manage the enterprise change the North Atlantic Council (NAC) issued the **C3 Alliance Strategy**¹ with a call to *“establish Enterprise Architecture discipline”*. This new discipline is further guided by Enterprise Architecture (EA) Policy, which explicitly sets EA primary objective to *“... translate NATO’s vision and strategy into effective change of the current business and IT environments ...”*².

Enterprise Architecture practice within NATO is already well established and the number of architectural products and use cases constantly increases. Nevertheless, the delivery of the ultimate effect – **Enterprise Change** – is often delayed due to organizational inertia.

ACT, driven by its transformational mission, have developed the concept of the TIDE Hackathon as a means to enable rapid transformation and innovation that could instantly re-shape the NATO Enterprise, and promote **“Interoperability by Design”** principle for the NATO Alliance and Federation. The concept is to directly address current business needs by applying an industry proven format, engaging with groups made up of both of experts and novices “parachuted” into high intensity work environment for a time limited period to focus on specific challenges and to develop innovative solution for them.

NATO’s multinational nature, its consensus-based business model and high level of organizational complexity form an environment where unique problems emerge. Some of them are trivial, whilst others are very challenging and difficult to solve by traditional means. TIDE Hackathon focuses on the latter and provides participants a rare opportunity to work with NATO experts to develop solutions. Many will agree - *“If you can solve it for NATO you surely can solve it for anyone else”*.

Participants from nations, NATO bodies, academia, and industry come to TIDE Hackathon to work in a competitive environment on the pressing issues NATO is facing today. The resultant solutions developed for a set of predefined challenges are kept in the open source domain to enable future development and collaboration. The best solutions are being deployed within the NATO Enterprise to address urgent business needs.

¹ Alliance Consultation, Command and Control (C3) Strategy, C-M(2014)0016

² Alliance C3 Policy, C-M(2015)0041-REV1, APPENDIX 9



TIDE Hackathon does not replace the traditional research, development and procurement processes, but rather complements them, with the aim to accelerate the enterprise change by stimulating multidisciplinary innovation in the areas of the greatest business risks and opportunities.

Aim

The aim of TIDE Hackathon is to create the environment for experts and novices who are involved, or interested, in businesses innovation and transformation to competitively work on the pressing problems identified within NATO Enterprise, Alliance, and Federation that are difficult to solve by the traditional means.

Objectives

The TIDE Hackathon events provide a mechanism to:

- Develop innovative architectural models, views, and methods for presented business cases
- Develop novel software/hardware based solutions for the “low-hanging fruits” business cases
- Promote “Interoperability by Design” principle and Enterprise Architecture (EA) discipline by sharing knowledge and increasing awareness among EA stakeholders

Background

In 2009 a small group of NATO and National architects met at TIDE³ Sprint in Amsterdam to begin building a community of experts interested in innovation and transformation of Enterprises by applying the frameworks, tools and techniques of the Enterprise Architecture discipline. The Enterprise Architecture track was born, and quickly has become one of the most popular tracks of the TIDE Sprint events.



The EA community work led to many joint ventures among participants and contributed to the production of the architectures, increase of the capability development process maturity and increase of the Communication and Information Systems (CIS) interoperability and standardization levels within NATO. The community driven architectural products include Consultation, Command and Control (C3) Taxonomy and C3 Technical Services Taxonomy⁴.

The EA community also influenced the work conducted by NATO policy makers what resulted in the approval by the NAC of the C3 Alliance Strategy⁵ that recognized and calls for the implementation of Enterprise Architecture as a discipline in the NATO Enterprise. As the highest-level policy document this strategy guides the development of Policies and Directives that orchestrate NATO organization and its interactions with Nations and partner organizations.

³ Think-Tank for Information Decision and Execution Superiority

⁴ NATO C3 Board, endorsement of "C3 Taxonomy Baseline 2.0", AC/322-N(2016)0021-AS1, 11 February 2016

⁵ Alliance Consultation, Command and Control (C3) Strategy, C-M(2014)0016



To further increase pace of the organizational change, the EA community proposed to provide more “hands-on” experience that could bring closer the mindsets of participants and lead to the development of transformational products. Following the best industry practices, it was agreed during the Fall TIDE Sprint in 2015 to use the Hackathon format to address the need for change. It allows for engagement with participants who are not traditionally involved in enterprise architecture, but could provide eye-opening ideas to the community. At the same time the teamwork and on-site prototyping of solutions would allow for rapid Idea-To-Solution cycles. Lastly, the hackathon format brings the friendly competition aspect that should not be underestimated.

As result of the success of first two events, the EA Hackathon has now been rebranded into the **TIDE Hackathon** to serve a larger community of interest in the future. It has also been identified as a key event to fast track the development of new concepts and capabilities through ACT’s Interoperability Continuum⁶ initiative, with an initial focus on speeding up development of Federation Mission Networking Spirals. The new focus also enhances the initial Idea-To-Solution cycle by extending it to Idea-to-Solution-to-Standardization. This has led to refinement of the hackathon definition as follows:

A TIDE Hackathon is an event in which individuals and small teams involved in software development and enterprise architecting collaborate intensively to Fast Track the “Interoperability by Design” approach.

During TIDE Hackathon teams compete to identify solutions to specific challenges by fostering innovation, engaging diverse stakeholders and improving understanding of challenges faced by the NATO Enterprise, Alliance and Federation.

Previous Hackathons



The participants of the 1st EA Hackathon⁷ delivered an unprecedented number of tangible products and solidified the community of Enterprise Architecture stakeholders. More than 20,000 lines of code, tens of models and accompanying pages of analytical work have been produced by the participants from nations, industry and academia during the week-long event. The event provided

outcomes that directly support operational needs and therefore add value to the NATO Enterprise. The results of the modelling challenge have been used right away by Multinational Capability Development Campaign (MCDC) community and by Mission Threads Capstone implementers, while the outcome of the coding challenge was incorporated into the ACT’S architectural software baseline in order to support

⁶ For more details see Tidepedia article at <https://tide.act.nato.int/tidepedia/index.php/Interoperability%20Continuum>

⁷ The 1st EA Hackathon took place in Cracow on 4-6 April 2016



capability development process. The final products contribute to a body of knowledge for the NATO and National architects, operational analysts and requirement engineers in order to increase the maturity of the EA discipline and to enhance tools suite at EA stakeholders' disposal. The products created during the 1st EA Hackathon remain in the open-source domain, and the Final Report⁸ is available on ACT website.

The 2nd EA Hackathon⁹ built upon the already proven business model, and introduced one additional challenge. The participants were able to address cyberspace as a fifth military domain (modeling); interoperability of NATO interoperability assessment databases (coding); and military applications of Internet of Things (joint challenge). The solutions developed at the event directly contributed to new concept for Cyberspace Operations; CWIX analytical capabilities; and development of new C2 Concept under ACT's C2 Focus Area respectively. Further details are documented in the Final Report¹⁰ including the links to the final products.



The participation in the event grew by twenty percent year on year, and a mix of expertise from industry, academia and military helped to find innovative solutions. Following the 2nd EA Hackathon execution ACT organized a planning conference¹¹ to review lessons learned in order to further capitalize on the event performance.

The outcome of the planning conference allowed ACT to formalize the TIDE Hackathon Framework (Appendix A) and to build the repository of hackathon challenge proposals. The TIDE Hackathon Framework can be used by Nations to capitalize on this proven format for national activities. The established repository of challenge proposals helps to synchronize national hackathon initiatives, clearly define interface points with other Interoperability Continuum events, and enables sharing of the hackathons' results.



⁸ The final report is available at <http://www.act.nato.int/images/stories/events/2016/ea-hackathon/ea-hackathon-2016-report.pdf>

⁹ The 2nd EA Hackathon took place in London on 27-31 March 2017

¹⁰ The final report is available at <http://www.act.nato.int/images/stories/events/2017/ea-hackathon/2017-ea-hackathon-finalreport.pdf>

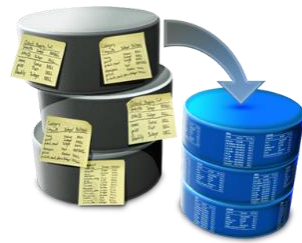
¹¹ The materials from the planning conference are available at [https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_Planning_Conference_\(18-20_Oct_2017\)](https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_Planning_Conference_(18-20_Oct_2017))



Components

Challenges

The TIDE Hackathon offers the participants two main types of challenges for competition – modelling and coding. It's recommended for the participating teams to select only one of the challenges. The generic description of the challenges is given below and is constant over multiple TIDE Hackathon events. The specific details of challenges for a given event are provided in the PART TWO of this Handbook and will vary from event to event.



The **Modelling Challenge(s)** calls for the development of innovative methods, visualization, architectural models, or techniques for the given business case, thus enabling the “Interoperability by Design” principle and improving effectiveness of the NATO Enterprise.

The **Coding Challenge(s)** apply to a given business case, which may be outcome of the previous **modelling challenge**, and calls for the development of novel software/hardware based solutions in support “Interoperability by Design” principle.

The TIDE Hackathon will occasionally also call for the **Joint Challenge(s)** as a combination of Modelling and Coding challenges.

Figure 1 depicts a simplified model of TIDE Hackathon execution process. First, a set of operationally driven challenges is defined. Those challenges are presented to the competing teams during Hackathon, and the best solutions are awarded with prizes. Lastly, the best solutions will be employed within NATO to address urgent operational needs and converted to standardization specifications.

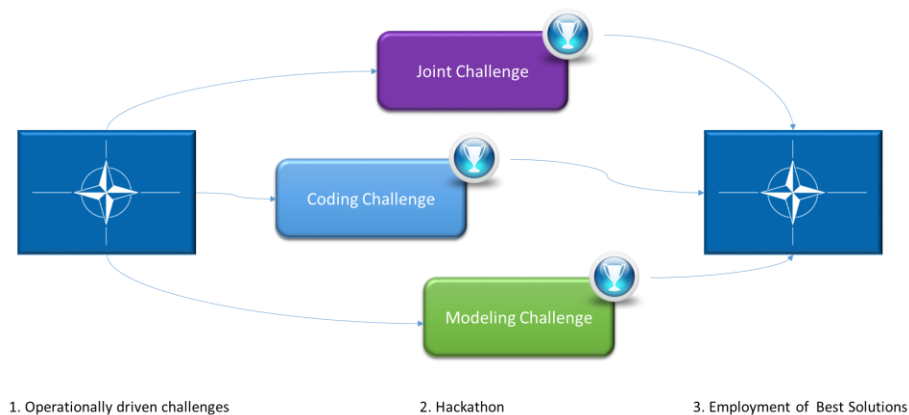


Figure 1. TIDE Hackathon Process



Presentations and Lectures

Through close collaboration with industry and academia the TIDE Hackathon provides a platform where participants have an opportunity to learn new, innovative technologies and advance their understanding of culture of innovation. This is achieved by organizing side lectures, presentations and coaching sessions. Although not mandatory to participate in, such sessions have demonstrated a significant value in the past events, positively influencing the final solutions. Apart from leveraging industry technology advances, the participants may also attend an entrepreneurship-focused session to benefit from “silicon-valley” identified best practices in order to be successful in the process of pitching and marketing their solutions.

Participants



The professions and skillset of the individuals participating in the TIDE Hackathon is not constrained by any formal requirements and includes, but is not limited to, EA/Business/ICT architects, operational analysts, system engineers, software developers, graphics designers, human factors experts and business managers.

There are no prerequisites on the level of expertise and all including experienced professionals, early adopters, and students are encouraged to participate. The TIDE Hackathon equally welcomes participants from Industry, Academia and Military/GO/NGO organizations. The TIDE Hackathon is not strictly a technical event, and therefore there is no need, nor prerequisite for a technical knowledge. Finally, enthusiasm and energy are equally important as expertise.

All the TIDE Hackathon participants have to be citizens from an Interoperability Platform¹² nation. The only additional, formal requirement imposed on a participant is sponsorship that should be obtained via National Military or Government organizations. See the Preparation chapter for more information about the registration process.

Teams and Selection Board

All the participants will register and form (or be formed) into teams of 2-3 persons before or on the first day of the event. Only registered teams will participate in the competition.

To assure the fairness of the competition and facilitate wide participation the TIDE Hackathon organizer will colour code each of the participating teams by blue, green or white colour. The following sections describe shortly each of the teams, their tasks and roles of individuals.

¹² Details of the Interoperability Platform can be found at https://www.nato.int/cps/en/natohq/topics_132726.htm



Blue Teams

Blue Teams are a competitive hackers' group of individuals from Military, Industry and Academia. The primary task of the Blue Teams is to solve and present the offered challenge(s).



Tasks of a Blue Team are:

- Participate in the main competition
- Study read-ahead materials
- Accept one or more challenges
- Develop solution(s) (separately defined for each of the challenges)
- Present the solution(s)

Roles in a Blue Team are:

- Team Lead
- Team Member

Green Teams

Green Teams are non-competitive hackers' group of individuals from NATO with a NATO Architect member. The primary task of a Green Team is to solve and present the offered challenge. To assure the fairness of competition Green Teams do not participate in the competition. The Green Teams are allowed to provide expertise to the Blue Teams upon request.



Tasks of a Green Team are:

- Study read-ahead materials
- Accept one or more challenges
- Develop solution(s) (separately defined for each of the challenges)
- Present the solution(s)
- Provide guidance to Blue Teams (informing white teams of each of interactions)

Roles in a Green Team are:

- Team Lead
- Team Member



White Team

The White Team is a non-competitive control team. The primary responsibility of the White Team is to assure the efficient execution of the Hackathon and fairness of the competition. The White Team is allowed to select one of the challenges and present the solution. The team members will include modelling and coding challenge designers, game controllers, Subject Matter Experts (SMEs), Media, Infrastructure designers and administrators.



Tasks of the White Team are:

- Assure the fairness of the game
- Provide the required guidance and expertise on challenges
- Define scoring criteria and detailed scoring table
- Develop the rules
- Prepare reporting formats
- Monitor and record interactions among groups (see groups interaction)
- Core infrastructure design, development and administration
- ICT infrastructure design and administration
- Develop and execute communication strategy and plan
- Study read-ahead materials
- Accept one challenge
- Develop solution(s) (separately defined for each of the challenges)
- Present the solution(s)

Roles in the White Team are:

- Team Lead
- Game Controller
- Challenge Designer
- SME
- Spokesperson
- Administrator



Selection Board

The Selection Board consists of a minimum of three voting members and the lead of the White team. The Lead of White team plays only advisory role and has no voting right. The selection board members will be nominated for each EA Hackathon.



Tasks of the Selection Board are:

- Review presented working prototypes
- Score the Blue Teams' products
- Select the winner of the coding and modelling challenges

Roles in the Selection Team are:

- Chairman (voting)
- Voting Member
- The Lead of White Team (non-voting)

Fees and Sponsorship

The EA Hackathon organizer will make a best effort to make the event free of charge for all the participants. However it's not guaranteed and need to be consulted with PART TWO of this Handbook.

There may be sponsorship options offered for third parties. This will be dealt with on per event cases and if offered will be specified in PART TWO of this Handbook.

Legal Aspects



The products developed during the EA Hackathon including software code, modelling visualizations, models and methods will remain within the open-source domain and should adhere to the following license (based on MIT Open-source licence):

"Permission is hereby granted, free of charge, to any person obtaining a copy of this visualizations, models, methods, software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so."

Media and Web Presence

The organizer will engage with media and public affairs officials in an early stage in order to align efforts for the benefit of the event, the organizer's native organization (usually: NATO Allied Command Transformation) and the host nation and/or organization.





Media and public affairs officials will set up a media plan as required and if appropriate. In that case, they will make the necessary arrangements for interaction with media, photographing and online media presence (which may include hashtags and pages on LinkedIn and Facebook).

Participants are encouraged to post comments and photos about the event on their own social media outlets, using the hashtag provided by the organizer and always being mindful of the safety and security of the event and its participants (i.e., avoid publishing “questionable” screenshots, pictures with visible I.D. or badges, face shots unless previously cleared with the person(s) in the picture, and in general any images where sensitive information could be released.

Logistics

Location and Setting

The location of each of the TIDE Hackathons will be specified in PART TWO of this Handbook. The organizer will aim at providing a convenient setting for the competing teams to enable optimal team collaboration, cross-team interaction and positive behaviour. In a typical setting, the arrangement of teams will be in accordance with the banquet room layout.

Agenda

The agenda of a typical TIDE Hackathon will be based on the following generic template:

- Day One – Set up (AM), Introductory Session (PM)
- Day Two-Day Four – Development
- Day Five – Presentations (AM), Awards Ceremony (PM)

Alternatively, for the shorter events the Development phase will be shortened to two, instead of three, days.

Industry Engagement

Industry is invited to send mentors to help participants with their work. The company's promotional materials such as shirts, pens, stickers, etc. may be distributed. Because the event is self-supporting, with limited NATO financial support, companies or organizations may also elect to support and promote the event in other ways. To discuss further these or other options contact TIDE Hackathon Coordinator.

ICT Infrastructure

The organizer will make a best effort to offer reliable wireless internet connection for all the participants. This however cannot be guaranteed and as a minimum the local area network wireless infrastructure will be offered consisting of access point and a shared network storage device.

All the participants are required to bring their own devices (BYOD) with WIFI network cards. The participants may offer their hardware, software libraries, architectural/requirements/3P repositories for other for reuse, exploitation and integration.



Information Packages

Each of the EA Hackathon events will deliver three information packages for the participants.

1. The initial information package consisting of TIDE Hackathon Trifold, Presentation, and Tidepedia event pages will be disseminated by email.
2. The final information package will also include the TIDE Hackathon Handbook and updated web pages on the public internet.
3. Upon arrival at the event the small “on-entry” info packet will be offered to all the participants and will include detailed ICT infrastructure info and additional administrative details.

Meals and Refreshments

The details regulating the meals and refreshments will be specified for each of TIDE Hackathon separately in PART TWO of the Handbook.

Lodging

The details regulating the lodging will be specified for each of TIDE Hackathon separately in PART TWO of the Handbook.

Transportation

The details regulating transportation options will be specified for each of TIDE Hackathon separately in PART TWO of the Handbook.

Social events

The social events details will be specified for each of TIDE Hackathon separately in PART TWO of the Handbook.





Process

The TIDE Hackathon process includes three main stages:

- Stage One – Preparation
- Stage Two - Execution
- Stage Three – Closure

Stage One - Preparation

Preparation activities include familiarisation, registration and preparation of challenges.

Familiarisation

In the process of preparation all the participants are encouraged to familiarize themselves with the read ahead materials posted for each of the challenges. If a participant decides to bring his/hers own software/hardware to share with other participants it should notify the EA Hackathon Organizer. Lastly, the participants should verify their working devices are meeting BYOD requirements.

Registration

The registration process involves two steps.

In the first step all the participants who don't have Tidepedia website account are required to send account creation request to tide@act.nato.int with the following data:

- First and Last Name
- Organization – including command/agency/company name and country (if applicable)
- Sponsor (if the organization is non-military)
- E-mail address – confirmation and instructions will be sent to this address
- Mentioning that the account is requested for the TIDE Hackathon

Once the participants received the credentials for Tidepedia portal and form a team they should send the following information to hackathon@act.nato.int to complete the team registration.

- Team Name
- Team Members' names
- Team Members' roles (see Teams and Selection Boards chapter)
- Team suggested allocation (blue or green team).
- Accepted Challenge(s) (modeling, coding, joint)
- Willingness to open a team for external participants (only for teams with 2 players)

The individual participants who received the Tidepedia credentials, in order to complete the registration process, should send email to hackathon@act.nato.int with the following information:

- Tidepedia user name
- Team preference (blue or green team)
- Challenge preference (modeling, coding, both)



The organizer will make the best effort to allocate individual participants to their preferred teams and challenges. The list of individual participants with their preferences will be published online as soon as they complete the registration process. The individual participants are welcome to contact directly the registered teams accepting external participants before the event.

The registration will be formally closed on the first day of the EA Hackathon.

Preparation of Challenges

The coding and modelling challenges will be revealed in stages leaving the element of surprise for the last minutes before the execution. The high level description of the challenges will be posted early on with the initial information package. The final information package will specify more details of the challenges providing detailed selection criteria, examples of possible solutions, and mandatory prerequisites. Lastly, the element of surprise will be brought to the participants on the day of the hackathon execution.

Stage Two - Execution

The execution of the main event will be broken into three stages. First, the Introductory sessions will prepare the execution on the site, followed later by the main Competition stage including Final Products Submission.

Introductory Sessions

After the basic ICT infrastructure set up and configuration the introductory session will be held and address:

- The official opening of the TIDE Hackathon;
- The introduction to challenges;
- Introduction to the competition rules;
- Introductory to ICT Infrastructure;
- Other relevant logistic information; and
- Questions and answers (Q&A).

Main Competition

During the main competition the teams will be solving the offered challenges. While this takes place interaction among teams is allowed as long as it not distracting other teams work. The participants are encouraged to act as following basic “library” behaviour rules.

The EA Hackathon Organizer promotes working environment that is:

- Civilized and unambiguous use of language, considering that participants may not speak their native tongue;
- Emphatic and open relations within the team, empowering all participants and valuing each other's abilities;
- Helpful and friendly interactions with other participants, respecting opposite and alternate opinions and contributions.



Final Products Submission

The final products along with presentation (optional) need to be stored on the shared server following the guidance provided by the Hackathon Coordinator.

Stage Three - Closure

Upon the completion of the main competition the closure stage will be started and it will include products presentation, scoring and awarding the winners. Subsequent to the event reporting and follow up actions will be conducted.

Products Presentation

Each of participating teams will be given the same amount of time for the presentation of the products. If a team participated in more than one challenge, the time for presentation will be adjusted accordingly. The presentation will be finished by Q&A session where each of the Board Members will be allowed to ask questions.

Selection Criteria and Scoring

The scoring of the final solutions will be conducted following detailed selection criteria defined for each of the Hackathon edition separately. The total score a team could receive will be a sum of solution score and presentation score. The solution will weight 80% of the final score while the rest will be allocated to the presentation of the solution.

$$\text{Total Score} = \text{Solution Score (80\%)} + \text{Presentation Score (20\%)}$$

All the challenges will be scored separately, and the teams with the highest scores will be selected as the winners.

Awards

The Awards Ceremony will close the official part of the Hackathon. The winning teams of each of the challenges will receive awards.

Reporting and follow up actions

After the closure of the official part the White Team will archive the final products and prepare the final report from the event. The report will be presented to the EA Track at TIDE Sprint, other relevant NATO and National bodies, and published online for an easy access to all the participants. There might be a survey conducted at the end the Hackathon in order to help improve the participants experience in the future events.





FAQ

Q: Can I bring my software, hardware, architecture/requirements repository and publish on the TIDE Hackathon network?

A: Yes. Let us know about it at the registration process so we could include it into our ICT plan.

Q: What are the rules of the competition?

A: For the generic rules please consult this Handbook. The detailed rules and selection criteria are included in the PART TWO of the Handbook that are specific to each of EA Hackathons.

Q: What tool(s) should I use for modelling/architecting?

A: There are no constraints on the selection of architectural tools. The participants, however are encouraged to use the open tools to promote “open systems” concept and standardization and NATO has adopted Archimate (from The Open Group) and the Unified Architecture Framework (from the Object Management Group) as the two standards.

Q: Are there any restrictions regarding tool vendors’ participation?

A: No

Q: What are the restrictions concerning outside contact during the competition (internet, downloads, phone-calls etc.)?

A: No restrictions.

Q: Is it possible to bring a team of more than 3 to the event?

A: No. The organizer wants the competition to be both manageable and the fair game. For those two reasons the number of a team members should not exceed 3 and be not less than 2 persons. The options to consider are:

- Bring more than one team. Make them possibly complementary teams. First modelling, second coding team.
- Bring one team and extra person/s to be attached to other teams or create the team on the fly with other participants.

Q: Is there going to be an element of surprise to the competition?

A: Yes. The organizer doesn’t want to reveal all the details of challenges upfront to avoid a situations where solution would be fully developed before the main event. Therefore there could be an element of surprise for the challenges.

Q: Is national sponsorship mandatory?

A: Yes, it is mandatory and its part of the registration process. Consult handbook registration description for more details.

Q: I assume that repositories will reside as parts of the tools used themselves. What is meant by shared servers and repositories? Is there a requirement concerning some form of standard representation and standard storage format?



A: The Hackathon will be run on the local area network that will provide the shared storage server (basic shared folders service, and possibly a local github). It's up to the participants to decide whether they want to plug in their own repositories to the Hackathon network to share with other participants. If that's the case however the organizer is asking to be informed about it during the registration process. There is no requirement regarding storage format.





PART ONE - Appendix A

TIDE HACKATHON FRAMEWORK

The nations participating in early editions of the hackathon expressed their interest in connecting existing, or establishing similar, innovative, national level events. It was identified that creating a *Coalition of Innovators* will benefit all members, and introducing basic principles and governing rules will help to share the hackathons' products and associated knowledge base. In response, ACT designed a TIDE Hackathon Framework to govern the interaction among various hackathons' organizers and provide best practice guidance. This Appendix presents the TIDE Hackathon Framework including a basic list of principles, a description of generic process, the associated products and shared repositories.

Principles

Hackathon organizers are strongly recommended to apply the following rules and principles to assure its successful execution:

- A hackathon shall be focused on "Interoperability by design" principle to expedite standardization efforts
- A hackathon shall maximize reuse factor by leveraging solutions already developed by national and international communities (e.g. TIDE Hackathon Solutions)
- A hackathon shall assure the balanced participation form military, academia, and industry
- A hackathon organizer shall always consider opening the event for involvement by other Interoperability Platform nations.
- A hackathon organizer shall help to avoid duplication of the efforts by de-conflicting challenges' proposals
- A hackathon organizer shall assure that each of the hackathon challenges has an operational sponsor assigned, and has a documented and supported business case
- A hackathon organizer shall share the hackathon results with the TIDE Hackathon community in English
- A hackathon final solutions shall be kept in the open source domain
- A hackathon organizer shall provide post-event lessons learned report in English to all the framework members

Process

The Figure 2 presents a generic TIDE Hackathon process from the organizers perspective and includes the key activities, products, and repositories shared by TIDE Hackathon framework members.

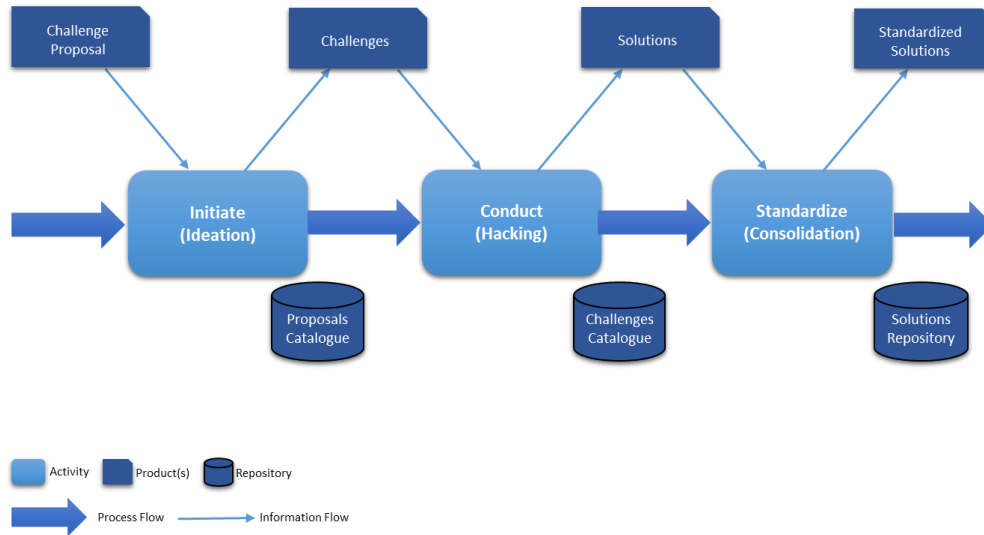


Figure 2. TIDE Hackathon Framework Main Process.

Initiate

The primary goal of *Initiate* step is to identify a list of challenges for the hackathon. Typically, this step is conducted as a set of brainstorming sessions where the challenge proposals are identified, described, screened, and final selected for competition. All the challenge proposals are stored within Proposals Catalogue¹³. Figure 3 below represents the state diagram of a change proposal.

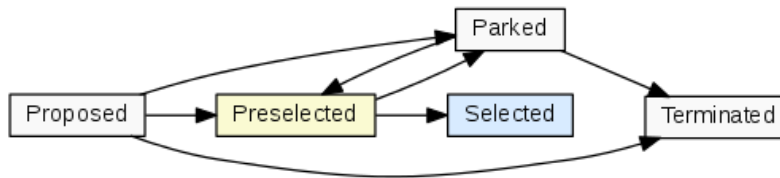


Figure 3. Challenge Proposal State Diagram.

Every new challenge proposal is entering repository in the `Proposed` state, and becomes inactive either by reaching `Terminated` or `Selected` state. When `Selected` state is reached the challenge proposal is linked to a newly created challenge in the Challenge Catalogue¹⁴. The complete list of states of challenge proposals' states is included below.

- `Proposed` — Every change proposal at creation has assigned a `Proposed` state. At the proceedings of ACT's "Interoperability Continuum Board" (ICB) the change proposals are screened and assigned to one of the following statuses:

¹³ The Proposals Catalogue is available at https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_Challenge_Proposal_Catalogue

¹⁴ The Challenge Catalogue is available at https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_Challenge_Catalogue



- **Preselected** — The challenge will be further screened by ICB, and challenge sponsor shall provide a sale pitch to the ICB.
- **Parked** — The challenge was identified to have a merit, but is parked for the current Interoperability Continuum cycle.
- **Terminated** — ICB was not able to determine a value within a given challenge
- **Selected** — Lastly, some of the **Preselected** challenges transition to **Selected** state to be included in the upcoming TIDE Hackathon. The Challenges will also transition into **Selected** state when picked by Nations for execution at the national level under TIDE Hackathon framework.

In addition to selection of challenge proposals, the *Initiate* step involves further preparatory activities. Those activities include preparation of promotional materials such as a hackathon Handbook, informational flyers and tri-folds, or appointment of the hackathon Selection Board.

The organizations following the TIDE Hackathon Framework shall:

- ***Catalogue their proposals and add these in TIDE Hackathon Catalogue***
- ***Prepare Hackathon Handbook and promotional material and share these with the TIDE Community as examples of best practice.***
- ***Share the calling notice with the TIDE community***

Conduct

The primary output from the hackathon is collection of delivered by the participants solutions. The organizer's main responsibility in *Conduct* step includes provision of a working environment to the participants, monitoring the event execution, capture of lessons learned, and assistance to the Selection Board in their proceedings. The final solutions shall to be collected and catalogued for the future reuse. The organizer of a hackathon is encouraged to follow the model of the execution of TIDE Hackathon following the best practices described in the main body of this Handbook.

The organizations following the TIDE Hackathon Framework shall:

- ***Consider TIDE Community membership on the Selection Board***
- ***Catalogue their challenges and add these in TIDE Hackathon challenge catalogue***
- ***Capture all the solutions code, documentation and briefings produced during the hackathon for standardization***

Standardize

The last step in the TIDE Hackathon Framework process includes consolidation, standardization and reporting actions. The main objective of this step is to reach the maturity level for all of the developed solutions that is sufficient as a basis for standardization efforts. Typically, it involves consolidation of the ideas from more than one solution. This step is very often followed by verification and validation actions, which are responsibility of the challenge sponsors, but stay outside the scope of the TIDE Hackathon Framework.



The organizations following TIDE Hackathon Framework shall:

- ***Provide a persistent environment where further consolidation of the solutions would take place***
- ***Produce Hackathon Final Report including Lessons Learned in English and share this with the TIDE Community as part of the Best Practice repository.***
- ***Assure the managed handover of the final solution to the challenge sponsor***
- ***Add copies of the solutions, or links/references to the organization's solutions repository, within TIDE Hackathon Solution repository***





PART TWO

3RD TIDE HACKATHON – PODGROICA, MNE – 19 TO 23 MARCH 2018

The 2018 TIDE Hackathon will take place Sports and Cultural Center of University of Montenegro located on the University campus. The event is coordinated by University of Montenegro Faculty of Electrical Engineering, Džordža Vasiingtona bb, 81000 Podgorica, Montenegro.



Objectives

The primary focus of the 3rd TIDE Hackathon is to support to Federation Mission Networking by applying Interoperability by Design principle within Interoperability Continuum series of events. In particular, the support to the FMN Spiral Specification development will be addressed by the execution of the following three challenges:

- Deployment of Coalition Cloud;
- Mobile Chat and Situational Awareness Applications;
- FMN Distributed File Sharing.

Agenda

Monday 19 March 2017

Main agenda:

- * 09:00 - 17:00 – Kick-off and development
- * 18:00 – 20:00 – Informal Ice-Breaker

Supplementary sessions:

- * 13:00 – 14:00 - Entrepreneurship at the Hackathon

Tuesday 20 March 2017 - Thursday 22 March 2017

Main agenda:

- * 09:00 - 17:00 – Development

Supplementary sessions:

- * 9:00 – 17:00 Coaching sessions (reservation required)

Friday 23 March 2017

- * 09:00 - 14:00 - Presentations and awards ceremony





Modelling Challenge

The participants of modelling challenge will be tasked to develop a set of **architectural patterns** representing how **Coalition Operations can adopt Cloud Computing Services** by applying ideas from state-of-the-art technologies and business practices.

The developed patterns should apply service oriented architecture principles, work in the federated environment, and identify interoperability points along with standardization opportunities.



Objective

To develop a reference architecture for a future C4ISR¹⁵ that will permit affiliates to offer cloud hosting services to mission partners in a deployed coalition.

Prerequisites

- Study the modelling challenge reference materials

Challenge



SACT’s General Denis Mercier articulated the Combat Cloud concept as *“The future combat system is not an aircraft, it is a C4ISR [system] with the cloud ID and platforms that are either piloted or unpiloted. We will have to be able to link on this. This is what we have to be able to build for the future, but we have to start it now.”*

The idea of a combat cloud – essentially the ability to link various assets together and use them to share information – is not a new one. Indeed, many militaries have been experimenting with providing “cloudlike” hosting for years. But when it comes to a coalition cloud, there are extra complications given the vast number of platforms and different C4ISR systems being used, replete with different tactics and procedures. Getting those to all work together in a cloud-based architecture means developing interoperability among NATO partners – both a technological and procedural challenge and the procedural challenge is often the greater one.

This modelling challenge calls for development of architectural patterns at business, information, application and technology layers for the provision of Application, Infrastructure and Platform as a Service (IaaS and PaaS) within a deployed coalition. The developed patterns should identify the standardization opportunities, and be applicable to the federated environments. The recognition of the consensus based business processes is important. It also recognises the constraints imposed by the reliance on a Limited, Intermittent and Disrupted bearer infrastructure, the potential synergies, risks (anti-patterns) and opportunities.

¹⁵ Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance



The list of stakeholders includes, but is not limited to capability developers, mission commanders, system engineers, operational analysts, IT service providers, and doctrine and training developers.

Participants are requested to develop a capability architecture, which supports the establishment of a “coalition cloud” within a mission planning and execution environments including:

- Security model to enable multiple partners to host their services
- Porting of services from national clouds to the coalition cloud and between FMN Mission Environments
- Scaling of workloads.

The developed solutions will then be presented to a board of military SMEs and NATO System engineers for evaluation.

Participants are encouraged to use the best industry practices, tools and techniques for the completion of the task.

Provision of Infrastructure as a Service is an FMN Spiral 4 objective and this challenge is expected to directly influence the further development and implementation of the FMN Spiral Instructions for Cloud Services. The most promising patterns will be used as the basis of the first iteration of the cloud service instruction and deployed within NATO Architecture Catalogue to guide development of future Alliance Capabilities.

Selection Criteria

The presented solutions will be judged based on the set of predefined criteria as defined in the table below.

Criteria	Description	Max Points
Meeting the stakeholders’ requirements	The solution correctly addresses the originally stated problem.	20
Innovative approach to the problem	The solution is using innovative approach to the stated problem.	20
Completeness of the solution	The solution is addressing the totality of the problem, not just part of it.	20
Simplicity and Scalability	The solution is scalable and easy to implement.	20
Presentation of the final product	The solution is presented in understandable and compelling way.	20
Total		100

Examples of Products

The list below includes only examples of possible solutions or their elements.



- *Business Process model with appealing visualization representing the core coalition cloud operational processes*
- *Information Model standardization proposal for the exchange of the key information products within a deployed coalition cloud*
- *Coalition Cloud services catalogue taxonomy*
- *A Business/Information/Application/Technology Architecture of a Coalition Cloud*
- *Catalogue of Standards/Profiles applicable to the provision of a coalition cloud*

References

- [NATO Cloud Computing Policy](#)
- [Architecture Building Blocks: IaaS inputs for NC3B IP CAT dated 10/12/2015](#)
- [Carnegie Mellon University work on Pervasive Mobile Computing](#)
- [TIDE Cloud Computing Portal](#)
- [Spiral 2 Reference Architecture](#)
- [C3 Taxonomy](#)
- [2ND EA Hackathon Final Report \(IoT Challenge\)](#)





Coding Challenge

The participants of the coding challenge will be tasked to develop working software prototypes by applying ideas from state-of-the-art technologies.

Developed solutions should apply service oriented architecture principles, work in the federated environment, and help to identify interoperability points along with standardization opportunities.



Objective

To develop mobile applications and services that will enable near real time coordination between tactical forces and between tactical forces and operational Command Element (CEs). These applications and services will enhance mission effectiveness, increase Situational Awareness (SA) and reduce the potential for fratricide (Blue on Blue engagements).

Prerequisites

- Study the modelling challenge and reference materials (Additional reference material may be added, please check the TIDEPedia page for this challenge for updates).
- Prepare devices (BYOD) and development environments you think you will require for succeeding in the challenge.

Challenge

Mobile tactical units generally operate in a dynamic and harsh environment into which they must transport all of their equipment. This equipment needs to be lightweight, ruggedized, safe and optimized for low power consumption. These constraints on equipment have an impact on radio range, throughput availability and computer performance. Tactical units need to exchange presence reports, alerts, general information and overlay graphics within a short timeframe to maintain relevance to the current operation. To minimize the load on the disadvantaged tactical radio networks typical ICT services, need to be optimized for this environment to meet the following requirements:

1. All units are required to communicate with operators in the CE via chat; units may also communicate directly with each other using the same chat capabilities
2. For operational security (OPSEC) reasons, units must be able to operate under radio silence (receive only) for limited periods of time
3. To support mission planning and execution, units use one or many C4ISR apps on mobile devices (Laptops, Smartphone, tablets etc.)
4. Units must be able to find and access any Intelligence, Surveillance, Reconnaissance (ISR) information relevant to their mission and Area of Responsibility (AOR), this information may reside within their tactical environment or on a federated Mission Network
5. Units must be able to
 - a. receive and display tactical overlay graphics on their mobile devices



- b. create tactical overlay graphics and share them with each other and with higher command elements
6. Units must be able to report any relevant incident (e.g. reporting an enemy contact) to the CE; units may also share this information with other units within the same AOR. Incidents have geospatial and temporal context (time/place).
7. Units must be able to submit various support requests, e.g. Medical Evacuation (MEDEVAC) requests or Joint Tactical Airstrike Requests (JTAR)
8. To avoid fratricide, tactical units must be aware of the location of friendly forces within their own AOR
9. For SA and to de-conflict the battlespace the CE must be aware of all unit positions within its assigned AOR
10. Units might be equipped with tactical ISR capabilities (e.g. Drone) – ISR collected (images/Video clips) must be able to be locally processed, annotated and shared with neighboring units and higher command entities
11. Dismounted soldiers must be able to receive and display geospatial referenced information (e.g. incident hotspots based on historical analysis / or current Intelligence Warnings / Friendly Force Information)
 - a. on their mobile device (e.g. display on map or augmented live view)
 - b. when operating hands free (i.e. augmented reality via optical head-mounted display)

Figure 4 below presents a notional network infrastructure. A similar network infrastructure will be emulated during the hackathon. Please be aware that the quality of the links will be deliberately reduced to emulate tactical radios. The green team will provide a gateway G with interfaces/APIs so that participants can access C4ISR Services such as operational chat and other SA capabilities on the federated Mission Network.

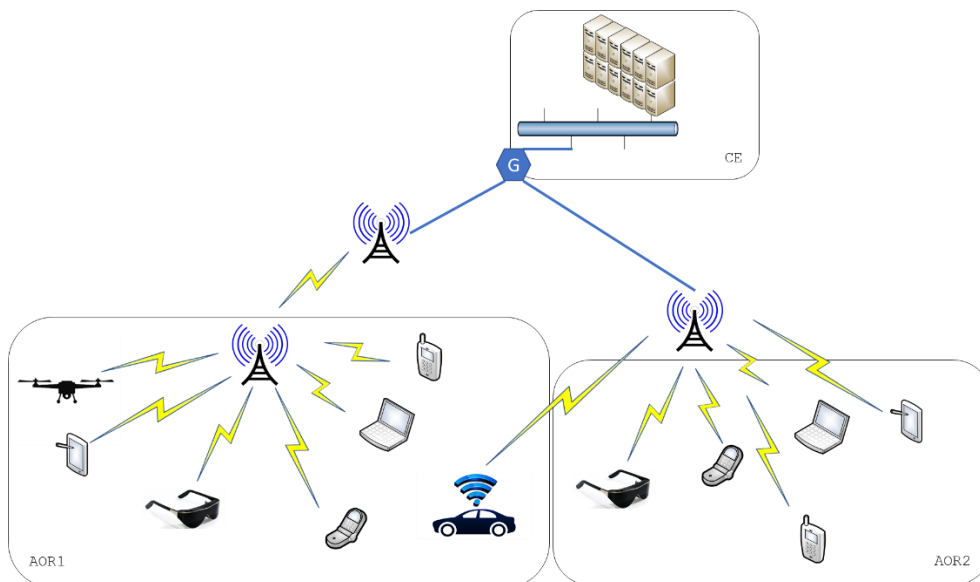


Figure 4. Challenge notional network infrastructure.

The participants of the challenge are requested to develop working prototypes of innovative military mobile collaboration and situational awareness applications that would allow to meet constraint tactical communications requirements. The developed solutions shall lead to significant increase of the tactical and operational knowledge sharing and ultimately effectiveness of operations.



The developed solutions will be presented to a board of military SMEs and NATO Systems Engineers for evaluation. Final products will remain open source, and may provide the foundation for NATO or national military mobile solutions, operational prototypes and technology demonstrators. The elements of concepts and architectures used during development may also be incorporated into formal FMN Specifications.

Selection Criteria

Criteria	Description	Max Points
Meeting the stakeholders' requirements	The solution correctly addresses the originally stated problem.	20
Innovative approach to the problem	The solution is using innovative approach to the stated problem.	20
Completeness of the solution	The solution is addressing the totality of the problem, not just part of it.	20
Simplicity and Scalability	The solution is scalable and easy to implement.	20
Presentation of the final product	The solution is presented in understandable and compelling way.	20
Total		100

Examples of Products

- *Flexible chat mobile application that adopts its underlying architecture in response to the environment conditions leveraging accordingly either peer-to-peer or client-server architectures*
- *Geo location based notification mobile application and associated open interfaces*
- *Adoptable mobile situational awareness application with automatically turn-on/off capabilities based on the communication infrastructure performance*

References

- Geospatial and Situational Awareness
 - [OGC® GeoPackage Encoding Standard](#)
 - [14416 OpenGIS Web Map Service \(WMS\) 1.3 Implementation Specification](#)
 - [NATO Vector Graphics \(NVG\)](#)
 - [ADatP-36 – Friendly Force Tracking \(FFT\) Systems Interoperability](#)
- Tactical_SOA
 - [SOA in the CoNSIS Coalition Environment - Extending the WS-I Basic Profile for using SOA in a tactical environment \(2012\)](#)
 - [Enabling service discovery in a federation of systems – WS-Discovery case study \(2014\)](#)
- Chat
 - [XEP-0174](#)
 - [An evaluation of serverless group chat](#)
 - [XO: XMPP overlay service for distributed chat](#)
- [NATO Cloud Computing Policy](#)
- [Spiral 2 Reference Architecture](#)
- [C3 Taxonomy](#)
- [2ND EA Hackathon Final Report \(IoT Challenge\)](#)

Joint Challenge

The task for the participants of Joint Challenge will be to develop experimental or demonstration solutions to the problem of sharing and using unstructured information in a federated, distributed environment.

Solutions can be either architectural models or working prototypes.



Objective

- Develop models and/or prototypes of applications that would show how to significantly improve the access to unstructured information (“files”/“documents”) in a federated environment.

Prerequisites

- Gain familiarity with current (Spiral 2) FMN Spiral Specifications (of most interest will be Email, Web Hosting, Distributed Collaboration and Information Management)
- Explore commercial and open source solutions

Challenge



The FMN Roadmap introduces the concept of Distributed File Sharing to the Federation. Files in this context can be considered as collections of unstructured information made available to the federation for use in many situations. Current FMN Specifications allow for the sharing of files as documents in one of two ways. They can be distributed as attachments to emails or they can be posted to web portals for subsequent download (one “push” mechanism and one “pull” mechanism”). Both of these mechanisms have drawbacks, including:

- Bandwidth – the file is normally transmitted separately to each recipient
- Assumed Knowledge – end points (email addresses, web site addresses) have to be known
- Information is not readily accessible - especially to applications
- Copies are not synchronized - once emailed or downloaded the recipient has a separate copy
- Not a “federated” solution

The use of unstructured information is currently biased towards direct access by human consumers, e.g. reading a document, watching a video. The current trends, especially in the fields of Big Data and Analytics, would indicate that unstructured information will need to be accessed more and more by applications instead. Having the information hidden in personal emails or on portals aimed at human readers makes this difficult.

The challenge, therefore, is to propose imaginative solutions to this scenario. The solutions can be presented as architectures or prototype solutions. It is assumed that there is no single, or one size fits all, solution to the drawbacks presented above and therefore combinations of solutions that address one or more aspects are expected.



The list below shows some products that address some aspects of the problems and are provided purely to generate ideas:

- Dropbox
- Google Docs/Drive
- AWS WorkDocs
- AWS S3 & Storage Gateway
- Microsoft Azure Files and Data Lake Store
- OwnCloud.com
- Box.com
- Pydio

Off-premise cloud solutions will not be part of the final solutions but can be used in prototypes if accompanied by information on how the solution would be implemented in a federated environment without access to off premise cloud.

The developed solutions will be presented to a board of military SMEs and NATO System engineers for evaluation. Final products will remain within open source domain, and will influence the future FMN specifications, and may become part of operational prototypes and technology demonstrators.

Selection Criteria

The presented solutions will be judged based on the set of predefined criteria as defined in the table below.

Criteria	Description	Max Points
Meeting the stakeholders' requirements	The solution correctly addresses the originally stated problem.	20
Innovative approach to the problem	The solution is using innovative approach to the stated problem.	20
Completeness of the solution	How much of the problems space is addressed	20
Simplicity and Scalability	The solution is scalable and easy to implement.	20
Presentation of the final product	The solution is presented in understandable and compelling way.	20
Total		100

Examples of Products

- *Open standard based unstructured information storage federated architecture*
- *Prototype software application demonstrating innovative use of federated, unstructured data, for example, by applying higher level analytical capabilities*
- *A set of open APIs that enable secure access unstructured data within federated environment which meet multi-level security requirement*

References

- [FMN Spiral 2 Specifications](#)



Logo Challenge



H•a•c•k•a•t•h•o•n

During the 1st EA Hackathon the participants were presented with an “after-hours” Logo

Challenge – “**decrypt the hidden message within the EA Hackathon Logo**”. All who solve Logo challenge will become a members of “**NATO Hackers Club**”, a special workforce that will group top talent to influence the future editions of Hackathon, and whose members may be called upon out of the Hackathon cycle to help address some of the most pressing NATO challenges.



Hugin Team at work.

The promotion of EA Hackathon to TIDE Hackathon coincided with solving the Hackathon Logo challenge. The Logo has been created by Hugin team from Denmark, and later by the US officer. As result the hidden logo message was revealed at TIDE Sprint and it reads “Keep 😊Hacking”.

The new logo for the Hackathon has been developed by the **NATO Hackers Club** and is presented below. As Hackathon is now supporting FMN, the two letters within the logo are FN, for Federated Networking. The logo has a new message encrypted within it with the improved encryption mechanism to increase the challenge difficulty level.



H•a•c•k•a•t•h•o•n

You can join NATO Hackers Club today! Just send the solution to one of the club members. Those who will manage to solve this problem will become members of the NATO Hackers Club, a prestigious special workforce that will group top talent to influence the future editions of Hackathon and may be called to address the most pressing alliance issues.

The members of NATO Hackers Club:

1. Ulf Bjerring, DK, e-mail merlin@mil.dk
2. Mads Rode, DK, e-mail fmi-ki-ua03@mil.dk
3. Brett T. Sammis, US, e-mail brett.sammis@act.nato.int



Media and Web Presence

The information about the 3rd TIDE Hackathon will be available on the following public web sites:

- ACT Web Page
 - <http://www.act.nato.int/ea-hackathon>
- ACT Facebook
 - <https://www.facebook.com/NATO.ACT/posts/10153378919055686>
- ACT Twitter
 - https://twitter.com/NATO_ACT/status/707616741464121344
- TIDEpedia Portal (Password protected – Tidepedia account required)
 - https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathons
 - [https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_\(19-23_Mar_2018\)](https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_(19-23_Mar_2018))
 - [https://tide.act.nato.int/tidepedia/index.php/EA_Hackathon_\(27-31_Mar_2017\)](https://tide.act.nato.int/tidepedia/index.php/EA_Hackathon_(27-31_Mar_2017))
 - [https://tide.act.nato.int/tidepedia/index.php/EA_Hackathon_\(4-8_Apr_2016\)](https://tide.act.nato.int/tidepedia/index.php/EA_Hackathon_(4-8_Apr_2016))

Logistics

Invitation

The formal invitation for the 3rd TIDE Hackathon has been published on Tidepedia at http://www.act.nato.int/images/stories/events/2018/tide-hackathon/2018_hackathon_calling_notice.pdf.

Registration

The participants shall follow the registration process described in the PART I of this Handbook. The list of registered teams and individuals will be published on the ACT's Tidepedia portal at:

[https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_\(19-23_Mar_2018\)_Registration](https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_(19-23_Mar_2018)_Registration).

The registration for the 3rd TIDE Hackathon will be closed on 19th of March at 12:00pm. The number of seats for the 2nd EA Hackathon is limited to 80 and the registration will be conducted on the first come first served basis.

Location and Setting

The 2018 TIDE Hackathon will take place Sports and Cultural Center of University of Montenegro located on the University campus. The event is coordinated by University of Montenegro Faculty of Electrical Engineering, Dzordza Vasingtona bb, 81000 Podgorica, Montenegro.

[https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_\(19-23_Mar_2018\)_Administration](https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_(19-23_Mar_2018)_Administration).

Fees

The Second EA Hackathon will be no-fee event for all the participants.



ICT Infrastructure

The participants will be using a wireless local area network provided by the organizer. The network will provide the common storage server where the interim and final products will be stored. The credentials required to access the network will be distributed on the first day of the Hackathon.

BYOD Requirements

- WIFI card
- Web Browser
- Pdf reader
- Git client (optional)

Meals and Refreshments

The organizer will provide tea and coffee. Other refreshments and meals are a responsibility for the participants.

Accommodation

Lodging needs to be self-arranged by participants. The list of nearby hotels is provided for your convenience on Tidepedia at the following link, however this list is not endorsed by the Organizer.

[https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_\(19-23_Mar_2018\)_Administration](https://tide.act.nato.int/tidepedia/index.php/TIDE_Hackathon_(19-23_Mar_2018)_Administration) .

Transportation

Transportation needs to be self-arranged by the participants. The organisers will not provide a transportation service.

Social events

There will be a no-host "icebreaker" reception on Monday 19 March. Further details will be promulgated at the Hackathon opening.

Points of Contact

EA Hackathon Coordinator:

Mr. Krzysztof Skurzak
Telephone +1 7577473206
Email krzysztof.skurzak@act.nato.int

EA Hackathon Administrator:

Mr. Peter Woudsma
Telephone +1 7577474222
Email peter.woudsma@act.nato.int



PART TWO – Appendix B

PROPOSALS AND CHALLENGES CATALOGUES

The list below provides a snapshot from the [Proposals Catalogue](#) and [Challenge Catalogue](#), both hosted on Tidepedia. The lists are provided here for quick reference, however for all the interested parties it is recommended to access the live system online for the latest changes and additions.

Proposals Catalogue

Proposal	Date	Type	Status
3D printing data files will be secured via blockchain (challenge)	19 Dec 17	Coding	Parked
AI Classifiers for Battlespace Objects (challenge)	19 Oct 17	Coding	Parked
Advanced Architectural Visualization (challenge)	18 Oct 17	Joint	Parked
Analysis and Visualization of C3 Taxonomy (challenge)	03 Apr 16	Coding	Selected
Analysis of Interoperability Assessment Data (challenge)	26 Mar 17	Coding	Selected
Architecture Pattern of Cyberspace (challenge)	26 Mar 17	Modeling	Selected
Artificial Intelligence in Military IoT Applications (challenge)	18 Oct 17	Joint	Parked
Audio Recognition of Battlespace Objects (challenge)	18 Oct 17	Coding	Parked
Containerized Open FMN Framework (challenge)	18 Oct 17	Coding	Parked
Containers (challenge)	17 Nov 17	Unknown	Parked
Cyber Simulation Service (challenge)	19 Dec 17	Coding	Parked
Data Centric Security (challenge)	27 Oct 17	Unknown	Parked
Deconflicting the FMN Services Model (challenge)	18 Oct 17	Modeling	Parked
Deployment of Coalition Cloud (challenge)	18 Oct 17	Modeling	Selected
Effective Cyber Operations (challenge)	18 Oct 17	Coding	Parked
Enhanced Frontline Situational Awareness (challenge)	18 Oct 17	Coding	Parked
FMN Distributed File Sharing (challenge)	18 Oct 17	Joint	Selected
Federated Collective Training (challenge)	18 Oct 17	Modeling	Parked
Federated Service Management and Control (challenge)	18 Oct 17	Joint	Parked
ICT Services at the Tactical Edge (challenge)	20 Oct 17	Modeling	Proposed
Information Operations Modeling (challenge)	18 Oct 17	Modeling	Parked
IoT Prototyping for C2 Effectiveness (challenge)	26 Mar 17	Joint	Selected
Military Application of Blockchain Technology (challenge)	18 Oct 17	Modeling	Proposed
Military Mobile Applications (challenge)	18 Oct 17	Coding	Selected
Mission Thread and Information Modeling (challenge)	03 Apr 16	Modeling	Selected
Mixed Reality Technology in the Military Environment (challenge)	18 Oct 17	Coding	Parked
Model NATO Enterprise (challenge)	18 Oct 17	Modeling	Parked
Open Source Conflict Warning Indicators (challenge)	18 Oct 17	Coding	Parked
Recognized CIS Picture (challenge)	18 Dec 17	Modeling	Parked
Scenario Generation (challenge)	18 Oct 17	Modeling	Parked
Secure Ecosystem for Federated Services (challenge)	18 Oct 17	Coding	Parked
Simplified Conversion of Data Formats (challenge)	18 Oct 17	Coding	Parked
Social Media Simulation Service (challenge)	27 Oct 17	Coding	Parked



Challenges Catalogue

Challenge	Date	Type	Event
EA Hackathon (27-31 Mar 2017) Coding Challenge	13 Jan 18	Coding	EA Hackathon (27-31 Mar 2017)
EA Hackathon (27-31 Mar 2017) Joint Challenge	16 Jan 18	Joint	EA Hackathon (27-31 Mar 2017)
EA Hackathon (27-31 Mar 2017) Modeling Challenge	13 Jan 18	Modeling	EA Hackathon (27-31 Mar 2017)
EA Hackathon (4-8 Apr 2016) Coding Challenge	01 Feb 16	Coding	EA Hackathon (4-8 Apr 2016)
EA Hackathon (4-8 Apr 2016) Modeling Challenge	01 Feb 16	Modeling	EA Hackathon (4-8 Apr 2016)
TIDE Hackathon (19-23 Mar 2018) Coding Challenge	16 Nov 17	Coding	TIDE Hackathon (19-23 Mar 2018)
TIDE Hackathon (19-23 Mar 2018) Joint Challenge	16 Nov 17	Joint	TIDE Hackathon (19-23 Mar 2018)
TIDE Hackathon (19-23 Mar 2018) Modeling Challenge	16 Nov 17	Modeling	TIDE Hackathon (19-23 Mar 2018)



