« networking the networkers »

2ⁿᵈ TF-NOC meeting
15-16 February 2010
Ljubljana, Slovenia

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Minutes

1.   Introduction, roll call, minutes, and actions

The second TF-NOC meeting was held on 15-16 February 2011, hosted by ARNES in Ljubljana, Slovenia. The task force meeting was held back-to-back with DANTE's Access Port Managers (APM) group meeting. TF-NOC was attended by 29 people of whom 3 people were joining in via Video Conference. The TERENA secretary was Peter Szegedi. The meeting agenda and presentations are available here:
http://www.terena.org/activities/tf-noc/meeting2/programme.html

- The welcome speech was given by Marko Bonač, director of ARNES.
  http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-welcome-marco.pdf

Stefan Liström (NORDUnet), the chair of the task force, also welcomed the participants and asked for a roll call. It was articulated by most of the meeting attendees that this forum is useful to learn more about how others are running NOCs and how NOC procedures can be improved based on others' experiences. CERN wants to share and learn good practices, DANTE is curious not only about things that are going well but other things that NOCs are struggling with. CARNET is interested in network management tools while University of Maribor would like to learn something new in this field. DFN, ARNES, AMRES were represented at the first time while some people from BELNET and UNINETT attended a TF-NOC meeting also at the first time.

- The minutes of the last task force meeting and the actual meeting agenda were approved without any changes. Stefan gave a summary of the recent action items and talked about the outcome of the meeting with the TF-MSP task force participants on dark fibre procurement issues. Slides are available here: http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-actions-stefan.pdf

  For the up-to-date status of the actions, please, visit the TF-NOC Wiki: https://confluence.terena.org/display/NOC/Action+points

There was a follow-up discussion on the dark fibre issues. The participants were asked if anyone has guides or specifications regarding e.g., OTDR measurements that the organisation itself or the provider performs on the fibres, how fibre routes are managed and documented, as well as what the major issues with cross-border fibres are. It was found that it is very important to know the exact route of the fibres. The diverse paths can really give the necessary redundancy. There are different practices at various organisations and providers regarding fibre measurements, documentations, escalating issues, handling spare parts, fixing cable cuts, etc. Some NRENs measure the whole path end-to-end others leave all the measurements to the provider. Not only the attenuation but the dispersion (PMD) measurements are also important. For example, during the dark fibre tender in Slovenia ARNES requested the necessary PMD measurements from the provider. Of course, it makes sense if there are competing offers on the market. Regarding the documentations and the fibre management tools it is important that the provider delivers all the necessary information about the fibre including its exact route. Several, mainly home-grown, fibre management and visualisation tools are being used by the NOCs.

Regarding the cross-border fibre issues there are two main situations; a) one single organisation owns the fibre across the border b) two organisations' fibre meet at the border. A Layer2 handout procedure only ensures the appropriate user experience. From monitoring point of view, on the cable between NORDUnet and SUNET there is a management tunnel established to the far end equipment on both sides of the border so both parties can check the end-to-end performance of the circuits. There are some experiences with alien wavelength transmission from Copenhagen to Amsterdam.

- At the end of the session Peter Szegedi (TERENA), as the leader of the liaisons work item, gave a brief overview on the actual status of the TF-NOC community including contributors, mailing list members, interested organisations and potential liaisons with other communities. http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-community-peter.pdf

2.   Taxonomy of NOC organisations, facilitate best practices

- Pavle Vuletic (AMRES) gave a talk about network management standards including TMForum and ITIL. The GN3 project's JRA2 - Task 1 on "Research of Control and Management functions needed for the GN3 multi-domain network services" has analysed various network management related standards. The major findings were summarised in the talk.

(Due to copyright issues the slides are not available on the public internet. Please contact TERENA Secretariat for further details.)

TM Forum Business Process Framework (eTOM) is a key element of TM Forum Frameworx. It is the industry's common process architecture for both business and functional processes. It has been implemented by hundreds of service providers around the world. Business Process Framework drives down operational costs by analyzing all facets of an organization's processes, thereby eliminating duplication, identifying missing process steps, expediting new development, and simplifying procurement. For example, it can be used in case of GEANT multi-domain services that are not implemented in one single organisation. UNINETT mentioned that their service and network management functions are merged at one NOC. TMF has a model for that too. NORDUnet and DANTE mentioned that they are members of TMForum. ITU-T adopted e-TOM that is freely available.

The Information Technology Infrastructure Library (ITIL) is a set of concepts and practices for Information Technology Services Management (ITSM), Information Technology (IT) development and IT operations. ITIL gives detailed descriptions of a number of important IT practices and provides comprehensive checklists, tasks and procedures that any IT organisation can tailor to its needs. ITIL is published in a series of books, each of which covers an IT management topic.

Pavle talked about the mapping between eTOM and ITIL processes. Actually, ITIL can be spread into various e-TOM business processes. There was a question if any part of these standards can be re-used in case of NOC operations. Although eTOM is for higher level of management, eTOM identifies key thinks that should be handled in NOC processes.

Stefan noted that in the NOC Taxonomy Work Item the plan is to collect those functions, in a form of check-list, that NOCs should cover. ITIL is not a best practice document, just a proposal. It would be good to know what the best way to implement it is. Maybe there are several ways but some basic processes should meet. CERN mentioned that they are implementing ITIL but according to their understanding it is not a Bible that you can take as is. It needs to be customised! Regarding the ITIL - eTOM mapping, it would be appreciated if a pre-selected list of topics can be created. The problem is that eTOM and ITIL have different vocabulary and it is too complex to start with both at the same time. Stefan volunteered to create a table of the eTom functions and see how many and if they are useful to use as a template for NOCs in order to input information about how they realize those functions.

ACTION 18 on Stefan Liström (NORDUnet) to create a preliminary list of eTom functions on the Wiki and see how many and if they are useful to use as a template for NOCs.

- Pieter Hanssens (BELNET) introduced a proposal for the label dictionary, as part of his work item, in order to facilitate the collection and systemisation of best practice documents on the TF-NOC Wiki. The aim is to attach tags to articles stored on the Wiki that are consistent, searchable, and human readable.
  http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-label-pieter.pdf

The proposal is to use hierarchy of labels. Exact description of the labels is important! The current proposal is available on the Wiki:
https://confluence.terena.org/display/NOC/Label+Dictionary

ACTION 19 on TF-NOC to review the proposed labels on the Wiki (for credentials contact Peter Szegedi at TERENA) and finalise the label dictionary by the next TF-NOC meeting in June 2011.

There was a proposal to use functional labels e.g., "restricted" or "obsolete" only for indications. The label itself won't make it restricted or obsolete, the document owner has to maintain the proper status of the uploaded content. Multiple labels can also be used according to the hierarchy. It is possible to write a small macro in Wiki that finds the top level hierarchies if the lowest possible level is given as label.

• Stefan Liström (NORDUnet) talked about the interest matrix of the TF-NOC participants and gave an introduction to the NOC flash presentations to be given in the afternoon. http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-taxonomy-stefan.pdf

Five important things to share and five important things to learn about have been collected from the task force participants. The topics have been mapped to work items and can be used to create the initial draft of the TF-NOC survey, to create the flash presentation template, to provide a contact list for other NOCs on specific topics, as well as to plan for future meetings.

The purposes of the NOC flash presentations are to get a comparative overview of how other NOCs participating in TF-NOC work, to give some answers to questions that some NOCs are interested to hear how others are handling, and to give some food for thoughts to what should be covered by the upcoming TF-NOC survey.

3. NOC flash presentations

The afternoon sessions were dedicated to the first set of NOC flash talks (more NOC introductions will follow on the next meetings). ARNES, BELNET, HEAnet, GRNET, PSNC, RedIRIS, UNINETT, CESCA, CERN, USLHCnet, GlobalNOC, and DANTE (GÉANT NOC + APM) had chance to introduce themselves based on the pre-distributed presentation template.

The presentations are available on the links below:

• Sandor Rozsa presented USLHCnet NOC
http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-uslhcnet.pdf

• Gareth Eason presented HEAnet NOC
http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-heanet.pdf

• Pieter Hanssens presented BELNET NOC

http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-belnet.pdf

- Maria Isabel Gandia Carriedo presented CESCA NOC
http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-cesca.pdf

- Gyorgy Balazs presented CERN NOC
http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-cern.pdf

- Haavard Kusslid presented UNINETT NOC
http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-uninett.pdf

- Stephen F. Peck presented Global Research NOC
http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-globalnoc.pdf

- Ana M. Medina Barahona presented RedIRIS NOC
http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-rediris.pdf

- Jože Hanc presented ARNES NOC
http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-arnes.pdf

- Andreas Polyrakis presented GRNET NOC
http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-grnet.pdf

- Wiktor Procyk presented PIONIER NOC
http://www.terena.org/activities/tf-noc/meeting2/slides/20110215-tfnoc-psnc.ppsx

- On the second day Toby Rodwell presented DANTE's GÉANT NOC and APM
http://www.terena.org/activities/tf-noc/meeting2/slides/20110216-tfnoc-danteapm-toby.pdf

The AV recordings of the NOC flash presentation sessions are also available. Please visit the links below:
https://vox.arnes.si/p32235292/
https://vox.arnes.si/p23474416/

The flash presentations clearly showed the wide variety of NOC organisations, structures, responsibilities, procedures, tools and communication practices. There are distributed and centralised NOC models, fully in-house and (partly) outsourced NOC structures. Some NOCs work only during working hours, others provide 24/7/365 service. Some provide SLA to customers, some don't. The number of NOC stuff and the set of managed network element and/or services show huge variation. Some NOCs use Skype for internal communication other have closed private IP phone networks to do the same.

HEAnet uses MediaWiki to store and maintain internal documents. HEAnet has the practice to generate PDF files from the Wiki content and distribute the print outs to everyone for daily update. CERN has recently started to use SharePoint for documents and procedures. It has the function of efficient search and automatic e-mail notification upon e.g., approval of a new procedure by the manager. DANTE NOC also expects SharePoint to be implemented soon.

- Toby Rodwell (DANTE) introduced the GN3-APM group to the TF-NOC participants. Access Port is the physical port on GEANT equipment by which NREN connects to the GEANT IP backbone. The Access Port Manager is the main administrative interface between an NREN and GÉANT. APM's traditional tasks include: receive monthly GEANT service reports, determine who has access to restricted GEANT sites and tools, and attend (closed) APM meetings.
  http://www.terena.org/activities/tf-noc/meeting2/slides/20110216-tfnoc-danteapm-toby.pdf

4.   NOC tools

Maria Isabel Gandia Carriedo (CESCA), the leader of Work Item C, gave an update on the NOC tool taxonomy activity. It is impossible to list and evaluate all the available NOC tools by this activity but a realistic aim is to collect a list of tools that have added value for the TF-NOC participants. The work plan for this activity was presented by Maria Isabel.
http://www.terena.org/activities/tf-noc/meeting2/slides/20110216-tfnoc-tools-maria-isabel.pdf

The first priority is to collect information about tools (that are being used, tried but doesn't work, or planned to be investigated in the future) via the TF-NOC on-line survey to be distributed to the TF-NOC participants. Among the ideas about the structure of the tool questionnaire it was mentioned that the basic tool functions should be the main criteria of systematisation. We should focus on basic functionalities that a tool can do and not on complex tools. In the survey, we should collect URLs pointing to home-grown tool descriptions, as well as we need to know if the tools is licensed or open-source.

ACTION 20 on Maria Isabel Gandia Carriedo (CESCA) to come up with an updated structure of the questionnaire section dedicated to NOC tools by the TNC meeting.

5.   TF-NOC survey workshop

The meeting was closed by a brainstorming workshop about the overall TF-NOC survey. Meeting participants in small parallel groups discussed about 3 parts of the survey, namely: Taxonomy, Tools, and Communication. The outcome of the parallel discussion groups was summarised at the end of the day.

The "taxonomy group" agreed that the whole survey should be simple to complete in order to increase the number of participants giving feedback. The survey should not require more than an hour to complete, and should only include "heavy questions" (questions that need a lot of explanation to answer) if they are considered important. The most important questions should be in the beginning of the survey (if people stop survey they still bring value). Other than that the survey should prefer multiple options questions (check boxes or drop down lists).

Regarding the basic function of the on-line survey tool, it is important that people can pause the survey (include a progress meter, if possible). At the end of the survey participants should see info from other surveys (reward for finalizing the survey). *Survey monkey* and *Lime survey* were mentioned as potential candidates.

The survey should include questions about infrastructure, equipment, functions, services, structure, responsibilities (outsourcing), assessments (KPI), users, peers, legal entity, standards used and experience in the NOC. The topics under NOC workflows and setting up and maintaining a NOC might not be relevant for the initial survey as it might be hard to express questions that are easy to answer in a survey for these topics.

The "NOC tool group" had the largest interest among the meeting attendees. The group agreed to collect the list of desired tool functionalities at the first place and the assessed tools can then be categorised by these functionalities.

The "communications group" found that the questions about internal and external communication methods and procedures should be separated in the survey. The internal part should cover the communication among NOC staff and on-call engineers. The external part should cover the communication with outsourced functions, vendors, circuit providers, and remote hands. The communication procedures should include best practices with phone, mobile, instant messaging, e-mail services and ticketing systems, as well as scheduled meetings or other practices with vendors, providers, and internal staff.

6.   Next steps and close

TF-NOC meeting participants agreed to have a brief discussion during the TERENA Networking Conference 2011. Peter reported that a half-day slot is reserved for TF-NOC on Sunday afternoon (on **15 May 2011** in Prague, Czech Republic). The meeting will be dedicated to the TF-NOC survey discussions and inputs. The logistic details and the planned meeting agenda will be available on the TNC2011 website:
https://tnc2011.core.terena.org/

Moreover, after a quick poll on the mailing list, it turned out that there is sufficient interest in a full task force meeting in June timeframe. SWITCH has volunteered to host the TF-NOC meeting on **28-29 Jun 2011**, in Zurich, Switzerland. The logistic details and the planned meeting agenda will be available on the TF-NOC website:
http://www.terena.org/activities/tf-noc/meeting3/

Both registrations are OPEN!

The meeting was closed by Stefan Liström (NORDUnet), the new chairman of the task force. Meeting host, presenters, and participants were thanked for their efforts and contribution to this successful meeting.

List of actions

TSec(11)017	Who	What	When
ACTION 18	Stefan Liström (NORDUnet)	to create a preliminary list of eTom functions on the Wiki and see how many and if they are useful to use as a template for NOCs.	May 2011

ACTION 19	TF-NOC all	to review the proposed labels on the Wiki (for credentials contact Peter Szegedi at TERENA) and finalise the label dictionary by the next TF-NOC meeting in June 2011.	May 2011
ACTION 20	Maria Isabel Gandia Carriedo (CESCA)	to come up with an updated structure of the questionnaire section dedicated to NOC tools by the TNC meeting.	May 2011

List of participants

NAME	AFFILIATION
Gyorgy Balazs	CERN
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Gareth Eason	HEAnet
Maria Isabel Gandia Carriedo	CESCA
Ivana Golub	CARNet
Jože Hanc	ARNES
Pieter Hanssens	BELNET
Ernst Heiri	SWITCH
Bojan Jakovljevic	AMRES
Avgust Jauk	Arnes
Uroš Kapelj	IT-TEL d.o.o.
Jure Knez	Arnes
Håvard Kusslid	UNINETT
Stefan Liström	NORDUnet
Ana Medina Barahona	RedIRIS
Steve Peck	Indiana University - GlobalNOC
Andreas Polyrakis	GRNET
Wiktor Procyk	PSNC
Toby Rodwell	DANTE
Gorazd Roposa	Univerza v Mariboru
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Bojan Schmidt	CARNet
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