



GNSSN Annual Report 2016

Global Nuclear Safety and Security Network



60 Years

IAEA

Atoms for Peace and Development

GNSSN ANNUAL REPORT 2016

Eights Steering Committee Meeting

CONTENTS

INTRODUCTION.....	1
1.1. BACKGROUND	1
1.2. OBJECTIVES AND SCOPE.....	1
2. GOVERNANCE AND STRATEGIC MANAGEMENT	2
3. ACCOMPLISHMENTS IN 2016.....	5
3.1. THE IMPLEMENTATION OF THE GNSSN MAIN ACTIVITIES	5
3.2. THE IMPLEMENTATION OF THE ANSN ACTIVITIES	6
3.3. ACTIVITIES TO STRENGTHEN THE TECHNICAL SAFETY ORGANISATION CAPABILITIES (TSO FORUM).....	6
3.4. THE IMPLEMENTATION OF FNRBA ACTIVITIES	7
3.5. THE IMPLEMENTATION OF REGULATORY COOPERATION FORUM ACTIVITIES	8
3.6. THE IMPLEMENTATION OF ANNUR ACTIVITIES	8
3.7. GLOBAL NUCLEAR SAFETY AND SECURITY COMMUNICATION NETWORK (GNSSCOM)	8
3.8. EUROPEAN AND CENTRAL ASIAN SAFETY NETWORK (EUCAS):	9
3.9. SMALL MODULAR REACTOR (SMR) REGULATORS' FORUM:.....	9
4. PROGRESS OVERVIEW	10
4.1. ASSESSMENT RATING SCALES.....	10
4.2. SUMMARY OF THE PROGRESS	10
4.2.1. The Global Nuclear Safety and Security Network (GNSSN).....	10
4.2.2. The Asian Nuclear Safety Network (ANSN)	11
4.2.3. The Arab Network of Nuclear Regulators (ANNuR).....	11
4.2.4. The Forum of Nuclear Regulatory Bodies in Africa (FNRBA)	12
4.2.5. The European and Central Asian Safety Network (EuCAS).....	12
4.2.6. The Global Nuclear Safety and Security Communication Network (GNSSCOM)	13
4.2.7. The Technical and Scientific Support Organization Forum (TSO Forum)	13
4.2.8. The GNSSN IT platform.....	14
4.2.9. GNSSN overall performance	15
4.3. FINANCIAL OVERVIEW	15
5. LESSONS LEARNED AND PROPOSED ACTIONS	17
5.1. LESSONS LEARNED	17
5.2. PROPOSED ACTIONS	17
5.3. RISKS.....	18
5.4. WORK PLAN OVERVIEW OF 2017	19
5.4.1. The Arab Network of Nuclear Regulators (ANNuR).....	19
5.4.2. The Asian Nuclear Safety Network (ANSN)	19
5.4.3. The European and Central Asian Safety Network (EuCAS).....	20
5.4.4. The Forum of Nuclear Regulatory Bodies in Africa (FNRBA)	21

5.4.5. The Global Nuclear Safety and Security Communication Network (GNSSCOM)	21
5.4.6. Global Education and Training Resources (GETR)	21
5.4.7. The Global Nuclear Safety and Security Network (GNSSN).....	22
5.4.8. The Technical and Scientific Support Organization Forum (TSO Forum)	22

INTRODUCTION

1.1. BACKGROUND

The International Atomic Energy Agency (IAEA)'s Nuclear Safety and Security Programme (Major Programme 3), covers one of IAEA's essential statutory functions - to establish standards of safety. It provides for the application of such standards and for guidance on nuclear security with the aim of achieving high levels of nuclear safety and security, to protect people, society and the environment.

The IAEA assists Member States in building national capacities and competencies. As per its Statute, one of the main functions of the IAEA is "To foster the exchange of scientific and technical information on peaceful uses of atomic energy" (Article III.A.3). In addition, according to Article VIII.C, the IAEA "shall take positive steps to encourage the exchange among its members of information relating to the nature and peaceful uses of atomic energy and shall serve as an intermediary among its members for this purpose". Through dedicated knowledge networks, the IAEA promotes the transfer of knowledge from countries with mature nuclear energy programmes to countries which have only just started embarking on such programmes.

The Global Nuclear Safety and Security Network (GNSSN) fosters a strong and sustainable global safety and security, representing a cornerstone of the Global Nuclear Safety and Security Framework (GNSSF). The GNSSN's mission is threefold, namely sharing information and knowledge, facilitating multilateral cooperation and coordination and capacity building. GNSSN is governed by two bodies, the GNSSN Steering Committee and the GNSSN Governance Board, each with distinct responsibilities.¹

The GNSSN strategic² plan is in line with the IAEA Medium Term Strategy³. It provides for its implementation and the achievement of its objectives. In this respect, sharing knowledge, expertise and results at the national, regional and global level, is the key in enhancing global nuclear safety and security. Resolutions GC(59)/9 and GC(60)/9, adopted during the IAEA's General Conference on measures to strengthen international cooperation in nuclear, radiation, transport and waste safety⁴, encouraged Member States to actively participate in the GNSSN and requested the Secretariat to continue to strengthen its effort in maintaining and developing the GNSSN, including the development of the knowledge platforms.

1.2. OBJECTIVES AND SCOPE

As defined in the GNSSN Term of Reference, the Secretariat is requested to prepare an annual report on the development and usage of GNSSN. This annual report is used to report on the GNSSN activities and progress and drafts out the accomplishment of the Secretariat in relation to the planned activities. The report is comprised of five chapters: (i) Introduction; (ii) Governance and Strategic Management; (iii) Accomplishments; (iv) Progress Overview; and (v) Lessons learned and proposed actions.

¹ Please refer to Annex for details on GNSSN Governance and Strategic Management.

² <https://gnssn.iaea.org/main/Documents/Core%20Documents/GNSSN%20STRATEGIC%20PLAN.pdf>

³ https://www.iaea.org/sites/default/files/mts2012_2017.pdf

⁴ https://www.iaea.org/About/Policy/GC/GC59/GC59Resolutions/English/gc59res-9_en.pdf

2. GOVERNANCE AND STRATEGIC MANAGEMENT

The initial development of the GNSSN was carried out jointly by the IAEA and the G8 Nuclear Safety and Security Group in 2007. Since then, the GNSSN has evolved into a strong human and digital networking platform which combines global nuclear safety forums and networks, regional safety networks and national safety portals. In recent times, there has been more focus on nuclear security through the linkage between the GNSSN and the Nuclear Security Information Portal (NUSEC) with the addition of nuclear security as a thematic area in two of the regulators' networks.

Over that last 10 years, GNSSN continuously supported the IAEA's Nuclear Safety and Security Programme (Major Programme 3) and as a knowledge network, is part of an integrated IAEA methodology for capacity building and contributes to enhancing international cooperation and dialogue in the field of nuclear safety and security.

During 2016, GNSSN accomplished various objectives as further discussed in the third chapter. With the objective to strengthen collaboration and cooperation in the area of nuclear safety and security on global scale, over 10 activities were carried as part of the implementation of the GNSSN work plan. Notably, 20 Member States have completed their National Platforms and 12 platforms are currently under development. A draft report on national experiences and approaches to managing nuclear safety knowledge is finalized. In addition, the GNSSN Highlights were published by the Secretariat and shared with over 4000 readers. A new platform, the Global Education and Training Resources, was implemented within the GNSSN framework and currently hosts almost 150 training courses and Basic Professional Training Courses (BPTC) have been made available through the GNSSN website.

GNSSN continued supporting the work of Regional Safety Networks in 2016. With the Asian Nuclear Safety Network (ANSN), 33 activities on regional and national level involving over 500 participants were implemented to support the Member States' capacity building in the area of nuclear safety. The Forum of Nuclear Regulatory Bodies in Africa (FNRBA) implemented 7 workshops and training with the support of the secretariat and the public interface of the FNRBA website was made available to the global community. The Arab Network of Nuclear Regulators (ANNuR) carried out 7 capacity building activities, involving more than 90 participants from 15 participating countries, and the public interface of ANNuR website was restructured and made available to the global community. Finally, the newly established European and Central Asian Safety Network (EuCAS) held its Steering Committee meeting, where the chairperson and Terms of reference were approved. Also, a EuCAS IT platform was implemented within the existing GNSSN platform.

Finally, GNSSN continued supporting the work of Global Networks and Forums in 2016. The Global Nuclear Safety and Security Communicators' Network (GNSSCOM) is under development to encourage Member State communication officers to connect and collaborate in non-emergency situations. Its IT platform was reviewed by few invited stakeholders and will be launched after completion of the GNSSCOM Steering Committee. Administrative, project management and technical support was provided to the Technical and Scientific Support Organization Forum (TSOF). Several activities have been implemented and a new platform for information exchange and collaboration has been made available for the public domain and key TSOF stakeholders.

In the last 3 years, the number of networks and forums under the GNSSN has increased. The current status of Networks, Forums and Portals included under the GNSSN is as follows:

Global Networks and Forums

- International Regulatory Network (RegNet)
 - Forum for Embarking Countries
 - Regulatory Cooperation Forum (RCF)
 - WWER Regulators' Forum
 - Forum for Senior Regulators of CANDU Reactors
- Global Safety Assessment Network (GSAN)
- Nuclear Security Information Portal (NUSEC)
- Technical and Scientific Support Organization Forum (TSOF)
- Emergency Preparedness and Response Network (EPnet)
- Global Nuclear Safety and Security Communication Network (GNSSCOM)
- Global Education and Training Resources (GETR)

Thematic networks

- Control of Sources Network (CSN)
- Education and Training Network in Nuclear Waste and Radiation Safety
- Forum for Safety and Security of Small Medium Reactors
- Occupational Radiation Protection Network (ORPNET)
- Mediterranean Region Transport Network (MedNet)
- Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS)

Regional safety networks

- Arab Network of Nuclear Regulators (ANNuR)
- Asian Nuclear Safety Network (ANSN)
- Forum of Nuclear Regulatory Bodies in Africa (FNRBA)
- Ibero-American Forum of Radiological and Nuclear Regulatory Agencies (FORO)
- Ibero-American Platform for Operators in the Area of Nuclear Safety (PIANOS)
- [Liaison with regional networks external to the IAEA (e.g. the European Nuclear Safety Regulators Group (ENSREG), Western European Nuclear Regulators Association (WENRA))]

Member States with their own national platform

Each Member State has its own National Nuclear Safety Knowledge Platform (National Platforms) serving as an interface to the national web-based knowledge platforms.

Countries that have currently completed their National Platforms are:

- Belarus
- Bulgaria
- Cameroun
- Canada
- China
- Egypt
- Ethiopia
- France
- Germany
- Indonesia
- Kenya
- Malaysia
- Nigeria
- Russian Federation
- South Africa
- Spain
- Tunisia
- Ukraine
- USA
- Viet Nam

3. ACCOMPLISHMENTS IN 2016

This section outlines the outputs in 2016.

3.1. THE IMPLEMENTATION OF THE GNSSN MAIN ACTIVITIES

- (1) **Implementation of the GNSSN work plan:** Over 10 activities were carried out with the objective to strengthen collaboration and cooperation in the area of nuclear safety and security on a global scale among national authorities, specialists, international organizations, forums and working groups.
- (2) **The GNSSN Plenary Meeting:** It took place during the IAEA General Conference on 28 September 2016 with the objective to collect feedback from Member States on the IAEA peer review services, including IRRS and IPPAS.
- (3) **Nuclear Safety Knowledge management:** Within the GNSSN framework, the Secretariat is assisting Member States in developing a national nuclear safety knowledge platform. 20 Member States have completed their National Platforms and 12 platforms are currently under development. Moreover, a draft report on national experiences and approaches to managing nuclear safety knowledge is finalized.
- (4) **GNSSN Highlights:** The GNSSN secretariat published the “GNSSN Highlights” in September 2016. This newsletter is gathering information on recent events within the GNSSN networks, updates on the regional networks activities and articles or interviews on key concepts related to nuclear safety and security networking. The edition was shared with over 4000 readers.
- (5) **The Global Education and Training Resources:** A new IT platform to facilitate information exchange on global nuclear safety education and training resources. Thereby, this platform, implemented within the GNSSN framework, facilitates the development of effective and efficient education and training systems within Member States. The resources contained in the platform would be categorized based on an agreed taxonomy. Currently, almost 150 training courses from U.S.A, KINS, Korea and IAEA have been published in this platform. Once the taxonomy is finalized, the restructuring of the existing platform has been planned, which would streamline the search features for the intended audience.
- (6) **Restructuring of the public interface of the GNSSN website:** The public interface of the GNSSN website was re-structured in order to improve the ease of navigation and promote key information exchange (achievements, news, upcoming events, publications, etc.) among the global community. The visual layout of the website was also further enhanced to promote branding of GNSSN. The new public interface of the GNSSN website was made available to the global community in February 2016. The restructuring of the GNSSN website restricted area has also been planned. This will be carried out with due diligence to all involved stakeholders.
- (7) **ARTEMIS:** Under the GNSSN platform, an IT platform for the ARTEMIS IAEA review service (integrated review service for radioactive waste and spent fuel management, decommissioning and remediation programmes) was reviewed by the ARTEMIS stakeholders. This platform would be used for collaboration purposes among involved stakeholders for the forthcoming ARTEMIS mission in Poland.
- (8) **Knowledge Management Platforms to facilitate sustainable goals development:** Within the framework of GNSSN, a Knowledge Management platform was implemented in October 2016 for the laboratories in Tunisia which are involved in research work for management of water resources using isotope hydrology. This initiative facilitates knowledge management for sustainable goals. The objective of the platform is to capture, maintain and disseminate information, via publications, co-

operation programmes technical volumes and student programmes' technical reports. The platform is available to the global community at <https://gnssn.iaea.org/main/ncp/tunisia/lrae>.

- (9) **Basic Professional Training Courses (BPTC):** The 23-module BPTC course, which includes textbooks, transparencies, case studies and examples of questions, has been made available to the global community via a new IT platform under the GNSSN website at <https://gnssn.iaea.org/main/bptc>.
- (10) **Regulatory Cooperation Forum:** The IAEA has placed more importance on the enhancement of coordination for support of safety-related activities implemented for regulatory bodies of countries embarking in a new nuclear power programme, including within networks such as the Asian Nuclear Safety Network (ANSN), Arab Network of Nuclear Regulators (ANNuR), and the Forum for Nuclear Regulatory Bodies in Africa (FNRBA). Support plans were developed for these countries, based on the IAEA guide SSG-16, Establishing the Safety Infrastructure for a Nuclear Power Programme, and a regulatory control course was organised for countries participating in the Regulatory Cooperation Forum.

3.2. THE IMPLEMENTATION OF THE ANSN ACTIVITIES

Administrative, project management and technical support for implementation of ANSN regional and national activity-plan

- (1) **Implementation of ANSN work plan for 2016:** 33 activities were implemented at the regional and national levels, involving over 500 participants, to support Member States' capacity building in the area of nuclear safety. The work plan consisted of the prioritized and selected activities, according to the status and phase of each member state.
- (2) **Establishment of ANSN work plan for 2017:** The ANSN work plan for 2017, containing 48 regional and national activities, was established to continuously support the Member States.
- (3) **Implementation of Self-Assessment:** To effectively support the Member States, self-assessment is utmost necessary to find gaps. The ANSN management group developed new guidelines for self-assessment against SSG-16. Six Member States, namely Bangladesh, Indonesia, Malaysia, Philippines, Thailand, and Viet Nam, are implementing self-assessment using the guidelines and will finish them by the end of March 2017.

3.3. ACTIVITIES TO STRENGTHEN THE TECHNICAL SAFETY ORGANISATION CAPABILITIES (TSO FORUM)

Administrative, project management and technical support of the TSO forum

- (1) **TECDOC defining:** "Technical and Scientific Support Organizations (TSOs) and their Services provided in support to Regulatory Functions" has been finalised and is currently under review by the Publication Committee.
- (2) **Expert Mission:** The definition of an expert mission to the Technical and Scientific capacity of TSOs supporting regulatory bodies in embarking countries has been started. It was initiated at a consultancy meeting in July 2016 addressing the needs and gap

analysis in exiting IAEA review missions. This work will go on in 2017 with the implementation of a dedicated workshop.

- (3) **Next TSO conference:** The Steering Committee has approved the preparation of the 4th TSO conference to be held in Belgium in 2018 with the support of the secretariat. Several activities have been implemented and discussed with the TSO members to initiate the preparation
- (4) **R&D needs:** The Steering Committee has decided to launch an action on research needs to support the TSO expertise.
- (5) **Restructuring of the TSO website:** The existing IT platform for the Technical and Scientific Organizations Forum (TSOF) would be decommissioned (1st quarter of 2017). A new platform for information exchange and collaboration has been made available for the public domain and key TSO stakeholders respectively (<https://gnssn.iaea.org/main/tsof>). Additionally, a dedicated workspace/webpage has also been implemented for the Research & Development function within this platform. Existing content from the old website has been migrated to the new website, which has already been made available to the global community.

3.4. THE IMPLEMENTATION OF FNRBA ACTIVITIES

- (1) **Coordination meeting:** In order to identify the needs linked to the priorities of the Strategic Action Plan in 2015, the FNRBA Plenary members have approved a Strategic Action Plan for 2016-2021 structuring the activities into 5 priorities. In August 2016, an assessment of the needs and challenges at the governance and at the technical level was conducted. For the first of its kind for the FNRBA — all stakeholder groups were invited: members of the FNRBA Steering Committee, leaders of the 10 thematic working groups (TWGs), local experts from 17 African Member States, 9 Technical Officers from the IAEA, and 3 delegates from the United States of America and the Republic of Korea as donor countries. They proposed 50 activities regarding the challenges sorted in 5 types of activities (development of skills, production of regulatory documentation and guidance, regional peer reviews, data base, awareness of policy makers).
- (2) **Implementation of FNRBA work plan:** About 7 workshops/trainings were implemented in 2016 with the support of the secretariat, and in some cases with the support of donors from the Republic of Korea (KINS), the United States of America (USNRC) and the European Commission (ENSTTI) and/or in combination with other networks.
- (3) **Enhancement in the FNRBA website:** In close co-operation with the FNRBA thematic working groups and other key stakeholders, the entire FNRBA website (<https://gnssn.iaea.org/main/fnrba>) was reorganised. Existing content from the collaboration space (restricted area) was also migrated to the new website in respective FNRBA thematic working group pages. The public interface of the FNRBA website was made available to the global community in June 2016. It has been planned to implement a tool in the FNRBA website, wherein FNRBA involved stakeholders would be able to submit their future activity plans, in line with the identified FNRBA strategic priorities.

3.5. THE IMPLEMENTATION OF REGULATORY COOPERATION FORUM ACTIVITIES

Collaboration among the RCF (Regulatory Cooperation Forum), ANNuR and FNRBA was established in 2016, and two collaborative workshops on regulatory control and licensing process have been planned for 2017 for the recipient countries of RCF, ANNuR and FNRBA.

3.6. THE IMPLEMENTATION OF ANNUR ACTIVITIES

- (1) **Implementation of ANNuR work plan:** In order to support the capacity building efforts of the ANNuR Member States (22 Member States), 7 activities involving more than 90 participants from 15 participating countries were organized. The participants were introduced to a number of IAEA methodologies of self-assessment and shared their experiences and lessons learned in the implementation of national activities.
- (2) **The implementation of joint IAEA-ANNuR project and action plan for enhancing regulatory supervision of research reactors in the Arab countries:** Two regional workshops were implemented in 2016 with the objectives to share practical knowledge and experiences regarding the nuclear safety technologies of nuclear installations mainly the safety review and assessment. Moreover, good practices for improving the regulatory competence framework has been discussed, including the systematic assessment of training needs and the development of national action plans.
- (3) **The ANNuR plenary:** 17 countries and 6 donor organizations have attended the plenary meeting of ANNuR, which was chaired by Dr Mohammed Garwan, Director of the energy sector in KACARE. The meeting discussed the various activities implemented under the network's working groups and the donor organization support that could be provided. In the conclusion, Member States requested the Secretariat to consider developing Capacity Building Centres in the Arab region for ensuring sustainability of the ANNuR capacity building programme.
- (4) **Enhancements in the ANNuR website:** In line with the enhancements in the FNRBA website, the public interface of ANNuR website (<https://gnssn.iaea.org/main/annur>) was also restructured and made available to the global community. It has been planned to migrate the existing content from the ANNuR collaboration space in respective thematic working group pages within the new website soon.

3.7. GLOBAL NUCLEAR SAFETY AND SECURITY COMMUNICATION NETWORK (GNSSCOM)

- (1) **Development:** GNSSCOM is under development to encourage Member State communication officers, from Regulatory bodies, Technical support organizations or other relevant organizations, to connect and collaborate in non-emergency situations in order to improve communication effectiveness and building public trust. Members of GNSSCOM would further collaborate and focus on enhancing transparency and effectiveness of communication, and improving dissemination of information. The GNSSCOM Term of Reference is under review and the first steering committee is expected to be organized in the second quarter of 2017.
- (2) **GNSSCOM IT platform:** It was reviewed by invited stakeholders of GNSSCOM. It was proposed to implement a communication toolbox within the GNSSCOM website. Further details for the communication toolbox have to be analysed and elaborated. The launch of the website has been further postponed until formulation of the GNSSCOM Steering Committee is completed.

3.8. EUROPEAN AND CENTRAL ASIAN SAFETY NETWORK (EUCAS):

- (1) **Development:** EuCAS was established to help safety professionals gain an overview of existing initiatives in the region, help identify additional needs and facilitate coordination of activities. The Steering Committee meeting was held in December 2016. Its members approved the chairperson, the Terms of reference of the 3 technical working groups and the participation of US-NRC as an observer.
- (2) **EuCAS IT Platform:** Following the launch of the new regional network for Central Asia and European Member States, a web IT platform was implemented for this network within the existing GNSSN IT platform. This will facilitate a sustainable system of mutual support, cooperation and coordination. EuCAS website will be reviewed by the EuCAS key stakeholders and, based on their feedback, further enhancements would be implemented. The EuCAS website would be made public by mid of 2017.

3.9. SMALL MODULAR REACTOR (SMR) REGULATORS' FORUM:

The IAEA facilitated meetings of the Small Modular Reactor (SMR) Regulators' Forum Steering Committee and its Working Groups. The Working Groups prepared reports relating to the size of emergency planning zones, the application of the concepts of defence in depth and a graded approach to SMRs.

4. PROGRESS OVERVIEW

4.1. ASSESSMENT RATING SCALES

GNSSN evaluates its progress towards achieving its performance on a traffic light rating system. Figure 1 provides an example of criteria used to determine the performance measure ratings.

TABLE 1: THE GNSSN RATING SYSTEM.

Rating	Status	Examples of Success Criteria
Green	On track or completed	GNSSN achieved or expects to achieve the planned activities, the majority of the activities, deliverables or results
Yellow	Below Target and/or Behind Schedule	GNSSN expects to achieve the planned activities, the majority of the activities, deliverables or results; however there is a programmatic, cost or schedule risk
Red	Significantly below target and/or behind schedule	GNSSN does not expect to achieve the activities in the planned timeframe or does not expect to achieve the intended results
Blue	Cancelled or postponed	GNSSN management has cancelled these activities and no longer planning the implementation of these activities during the reporting period

4.2. SUMMARY OF THE PROGRESS

- (1) **Strategic Goal 1 (SG1):** Enhanced networking and cooperation within and among Member States and networks
- (2) **Strategic Goal 2 (SG2):** Strong platform for the exchange of technical knowledge
- (3) **Strategic Goal 3 (SG3):** Enhanced competence in nuclear safety and security
- (4) **Strategic Goal 4 (SG4):** Achieve the highest level of nuclear safety and security through a harmonized [holistic] approach to capacity building.

4.2.1. The Global Nuclear Safety and Security Network (GNSSN)

TABLE 2: PROGRESS OF GNSSN TOWARDS ACHIEVING THE STRATEGIC GOALS

GNSSN Strategic Goals	SG1	SG2	SG3	SG4
No. of activities	18	14	0	5
On track or completed	78%	72%		60%
Below Target and/or Behind Schedule	22%	21%		
Significantly Below Target and/or Behind Schedule				

Cancelled or Postponed	7%	40%
------------------------	----	-----

The distribution of activities of GNSSN reflects the needs of its stakeholders. The activities cancelled or postponed under SG4 are related to the Nuclear Safety and Security Interface and the Safety and Security Framework. GNSSN facilitates building capacities in Member States through regional networks; therefore, no activities related to SG3 were planned.

4.2.2. The Asian Nuclear Safety Network (ANSN)

TABLE 3: PROGRESS OF ANSN TOWARDS ACHIEVING THE STRATEGIC GOALS

GNSSN Strategic Goals	SG1	SG2	SG3	SG4
No. of activities	5	4	38	16
On track or completed	80%	75%	52%	100%
Below Target and/or Behind Schedule	20%	25%	29%	
Significantly Below Target and/or Behind Schedule			12%	
Cancelled or Postponed			7%	

The lower implementation of SG3 is due to the number of planned national workshops that were cancelled or postponed to 2017 on the request of host member countries. The reasons behind it were a lack of funding and a shift in host countries priorities.

4.2.3. The Arab Network of Nuclear Regulators (ANNuR)

TABLE 4: PROGRESS OF ANNUR TOWARDS ACHIEVING THE STRATEGIC GOALS

GNSSN Strategic Goals	SG1	SG2	SG3	SG4
No. of activities	2	2	6	2
On track or completed	67%	100%	66%	100%
Below Target and/or Behind Schedule	33%		17%	
Significantly Below Target and/or Behind Schedule				
Cancelled or Postponed			17%	

The lower level of implementation related to SG1 and SG3 is mainly related to a lack of sufficient funding. The Arab Atomic Energy Agency requested the establishment of an extra budgetary fund to encourage its member countries to contribute to ANNuR.

4.2.4. The Forum of Nuclear Regulatory Bodies in Africa (FNRBA)

TABLE 5: PROGRESS OF FNRBA TOWARDS ACHIEVING THE STRATEGIC GOALS

GNSSN Strategic Goals	SG1	SG2	SG3	SG4
No. of activities	3	2	6	2
On track or completed	100%	100%	83%	100%
Below Target and/or Behind Schedule				
Significantly Below Target and/or Behind Schedule				
Cancelled or Postponed			17%	

Within the FNRBA, significant work was carried out to increase its efficiency and effectiveness and its contribution in nuclear and radiation safety and security. FNRBA published five new technical Publications on its new public website and with the support of the IAEA set an activity plan based on the assessment of the need built together with the experts and the donor countries. There was one delayed activity, the Expert Mission on the Emergency Preparedness and Response Peer Reviews, which will be discussed during the next Steering Committee in July 2017.

4.2.5. The European and Central Asian Safety Network (EuCAS)

TABLE 6: PROGRESS OF EUCAS TOWARDS ACHIEVING THE STRATEGIC GOALS

GNSSN Strategic Goals	SG1	SG2	SG3	SG4
No. of activities	5	1	0	0
On track or completed	80%	100%		
Below Target and/or Behind Schedule	20%			
Significantly Below Target and/or Behind Schedule				
Cancelled or Postponed				

The Terms of Reference of the new European and Central Asian Safety Network were signed by 21 Member States and the first Steering Committee took place in December 2016 to propose activities in Safety Infrastructure, Safety of Radioactive waste and Spent Fuel and Environmental Remediation and Decommissioning. EuCAS has already formed Technical Groups that will be in charge of designing and implementing more activities in 2018.

4.2.6. The Global Nuclear Safety and Security Communication Network (GNSSCOM)

TABLE 7: PROGRESS OF GNSSCOM TOWARDS ACHIEVING THE STRATEGIC GOALS

GNSSN Strategic Goals	SG1	SG2	SG3	SG4
No. of activities	3	1	2	0
On track or completed	67%	100%		
Below Target and/or Behind Schedule	33%		100%	
Significantly Below Target and/or Behind Schedule				
Cancelled or Postponed				

The activities postponed by GNSSCOM will take place after the Steering Committee meeting which is being held in May 2017.

4.2.7. The Technical and Scientific Support Organization Forum (TSO Forum)

TABLE 7: PROGRESS OF THE TSO FORUM TOWARDS ACHIEVING THE STRATEGIC GOALS

GNSSN Strategic Goals	SG1	SG2	SG3	SG4
No. of activities	3	2	6	2
On track or completed	100%	100%	50%	67%
Below Target and/or Behind Schedule				
Significantly Below Target and/or Behind Schedule				
Cancelled or Postponed			50%	33%

Within the Technical and Scientific Support Organization Forum (TSOF), the TECDOC defining the characteristics of the TSOs supporting the Regulatory Functions was finalised and a new action to support Technical and Scientific capability of TSOs supporting Regulatory Functions in embarking countries was started. Research and Development and technical meeting activities have been postponed to 2017, after the activities for supporting TSO in embarking countries take place in April 2017 and terms of reference are precise. Nevertheless, a dedicated webpage for safety related research has been developed.

4.2.8. The GNSSN IT platform

GNSSN website has experienced a significant increase in users with respect to the previous reporting period. Figure 1 shows that in 2016 there were 18,066 users, which correspond to almost 4,000 users more than in 2015.

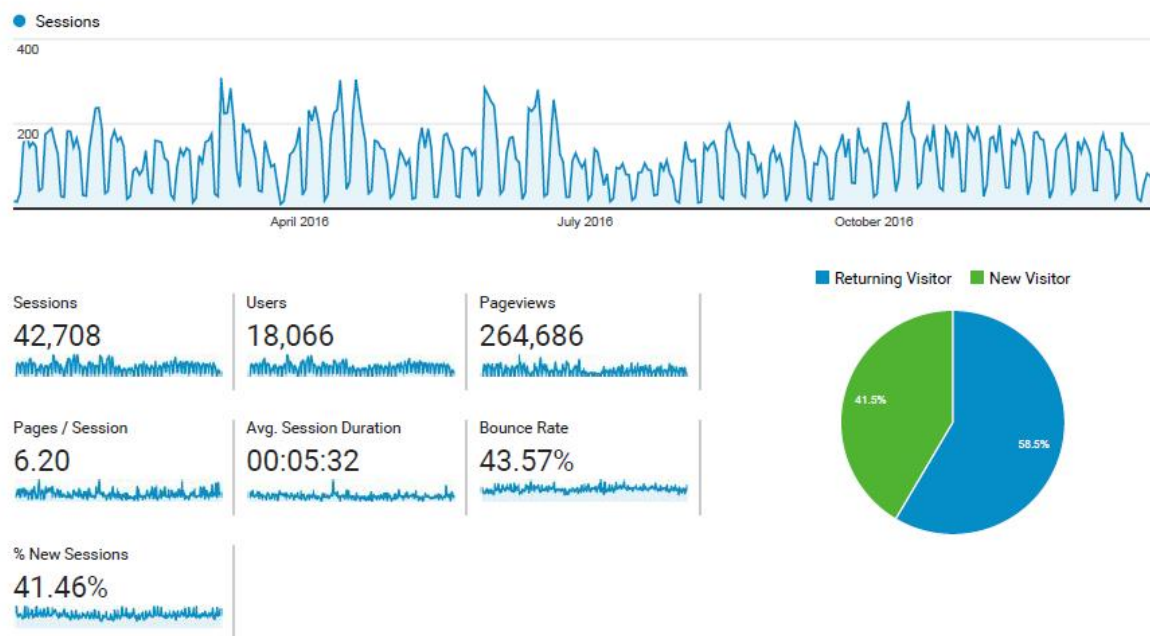


FIG.1: GNSSN Audience Overview

Even though the top 10 countries using GNSSN are nuclear power countries (except Austria, IAEA HQ) the number of clicks didn't exceed 50 % of the GNSSN general use. Developing countries through regional and thematic networks are working closely with the IAEA Secretariat and international partners to share and manage radiation and nuclear safety knowledge.

Country	Sessions	% Sessions
1. Austria	12,825	30.03%
2. United States	2,241	5.25%
3. Germany	1,797	4.21%
4. Japan	1,455	3.41%
5. Canada	1,083	2.54%
6. France	1,013	2.37%
7. United Kingdom	997	2.33%
8. India	874	2.05%
9. Russia	859	2.01%
10. South Korea	715	1.67%

FIG.2: GNSSN Audience Overview per Country

4.2.9. GNSSN overall performance

Table 8 represents the overall performance of the networks summarized by the activities implemented in relation to the strategic objectives.

TABLE 8: SUMMARY OF THE OVERALL PERFORMANCE OF THE NETWORKS

GNSSN Strategic Goals	SG1	SG2	SG3	SG4
No. of activities	39	26	58	27
On track or completed	82%	93%	51%	85%
Below Target and/or Behind Schedule	18%	7%	29%	
Significantly Below Target and/or Behind Schedule			2%	
Cancelled or Postponed			18%	15%

The lower level of implementation of SG3 is related to a lack of sufficient funding as training, workshops and national and regional events are particularly costly. The Secretariat has taken action to develop E-learning modules as an alternative to the implementation of workshops, reducing face-to-face meetings.

4.3. FINANCIAL OVERVIEW

An overall budget of over two millions US dollars was allocated to the GNSSN activities in 2016. The IAEA regular budget contribution to the GNSSN programme represents 8%. This is shown in Figure 3.

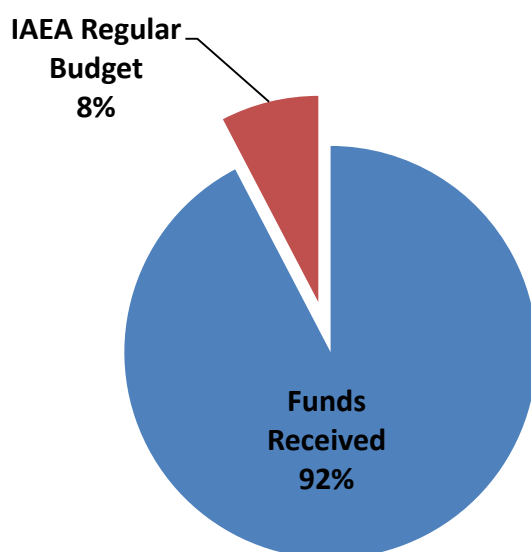


Figure 3: GNSSN 2016 budget

ANSN is a mature network and a model project for other regions, which has continuously focused on improvement of the safety infrastructure, development of the regional capacity building system, harmonization of the regulatory approaches and practices in the region.

In 2016, ANSN implemented 61% of the available budget. Actuals by networks are represented in Figure 4.

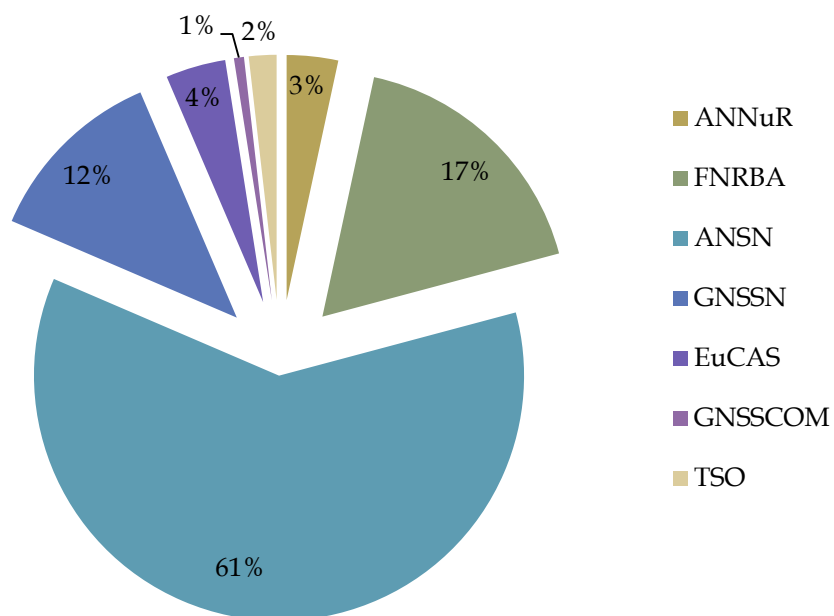


Figure 4: Actuals by network

5. LESSONS LEARNED AND PROPOSED ACTIONS

5.1. LESSONS LEARNED

There is a need to assist Member States, upon request with an integrated capacity building plan for radiation and nuclear safety. This plan could be the result of an evaluation of Member States' infrastructure with regards to capacity building and the safety standards request for competence management at the national level.

GNSSN and all regional networks are implementing over 100 capacity building activities yearly. There is a need to develop a system that assists the Secretariat and Member States to track the competence development of the beneficiaries of GNSSN capacity building programme.

The Secretariat is one of the partner organizations that provides and assists Member States with developing a strong and sustainable nuclear safety infrastructure. There is a need to ensure highest coordination and establish multi-action projects to avoid duplication and ensure consistency.

There is a need to reduce the face-to-face meetings and engage in new technologies to support the Secretariat in building the necessary competences in Member States.

5.2. PROPOSED ACTIONS

- (1) The Secretariat has started developing a global map for nuclear safety education and training resources.
- (2) The Secretariat will further promote its services and implement capacity building programmes through the regional networks ensuring optimal efficiency and coordination between the regions and the programmes.
- (3) The Secretariat will foster new partners in the regions (e.g. ASEAN, AU, AAEA, AFRA, WENRA etc.) in order to ensure optimal support and policy dialogue in relation to enhancing nuclear safety nationally, regionally and globally.
- (4) The Secretariat is encouraged to further implement the National Nuclear Safety Platforms as a means to implement the nuclear safety knowledge management programme.
- (5) The Secretariat will start developing a questionnaire for capacity building to help its Member States analyse needs related to competence management at the national level.

5.3. RISKS

TABLE 9: RISK ANALYSIS OF POTENTIAL ISSUES.

Risk No.	Risk	Probability	Impact	Remedial Action	Risk Owner
1	Inadequate financial support	High	High	Identify alternative resources and address issues with donors and IAEA high level management	Steering Committee/ IAEA
2	Lack of awareness of the Governance Plan and policy enforcement among GNSSN stakeholders	Low	High	Identify communication and outreach material and address the issue to the GNSSN Executive	GNSSN Governance Board
3	Lack of coordination between the GNSSN stakeholders and partners	Low	Medium	Identify alternative communication path and address the issue to the GNSSN Executive	GNSSN Advisory Group
5	Malfunctioning of the IT infrastructures supporting the GNSSN	Low	Medium	Troubleshoot errors and report to IAEA Division of Information Technology	GNSSN Network Coordinators
6	Data and information on the GNSSN platform becoming outdated and not being replaced or removed.	Medium	High	Ensure responsible commitment and accountability of relevant member of GNSSN	GNSSN Governance Board
7	Lack of quality control and effective management for the regional networks	Low	High	Identify the areas that need to be further monitored and ensure accountability	Steering Committees

5.4. WORK PLAN OVERVIEW OF 2017

5.4.1. The Arab Network of Nuclear Regulators (ANNuR)

- Regional Workshop on Regulatory Control for Nuclear Power Plants;
- 8th ANNuR Annual Meeting;
- Annual Meeting on Safety and Licensing of Research Reactors;
- Workshop on National Nuclear Safety Knowledge Platforms;
- Workshop on Establishing a Regulatory Inspection Programme for Research Reactors;
- Workshop on Small Modular Reactors: Safety and Licensing;
- Workshop on the Safe and Secure Management of Nuclear Power Programmes;
- Regional Workshop on the Licensing Process for Nuclear Power Plants;
- Workshop on Nuclear Safety Capacity Building through Competence Management and Human Resource Development;
- Workshop on Nuclear Safety Capacity Building, including Development of National Nuclear Safety Knowledge Platforms.

5.4.2. The Asian Nuclear Safety Network (ANSN)

- Regional Workshop on Regulatory Control for Nuclear Power Plants;
- Human resource staff and interns until expected arrival of next contributions: 16 months (Jan'17-April'18) for NRA, and 12 months for NSSC (Jan-Dec '17);
- Human resource as cost free expert;
- Regional Workshop on Accident Analysis for ATWS (anticipated transient without scram) in the Design of Reactor Coolant System and Reactivity Control System and Walk-down Bataan NPP;
- Regional Workshop on the Safe Management of Spent Fuel from Research and Power Reactors;
- Regional Workshop on Small Modular Reactor Safety and Licensing;
- Regional Workshop on Safety Assessment of Spent Fuel Subcriticality in Storage/Pool and Cooling during Handling, Transfer and Storage;
- 25th Meeting of the Steering Committee of the Asian Nuclear Safety Network;
- 26th Meeting of the Steering Committee of the Asian Nuclear Safety Network;
- First Consultancy Meeting on the Revision of the Asian Nuclear Safety Network Vision 2020;
- Second Consultancy Meeting on the Revision of the Asian Nuclear Safety Network Vision 2020;
- Regional Workshop on National Nuclear Safety Knowledge Platforms;
- Regional Workshop on Competency and Profile of Technical and Scientific Support Organizations;
- Regional Workshop on Examination Method Optimization for Licensed Reactor Operators and for Senior Reactor Operators in Nuclear Power Plants;
- Regional Workshop on Guidance for Emergency Planning Zones;
- Regional Workshop on Regulatory Control;

- Regional Workshop on Safety Requirements and Design Improvements for Small and Medium Sized Reactors Focused on Station Blackout Accidents and Annual Meeting of the Topical Group on Safety Assessment;
- Regional Workshop on the Development and Implementation of a Radioactive Waste Management Programme Focusing on Site Selection, Site Characterization and Design;
- Workshop on Communication Issues Related to Radioactive Waste Management (joint w. EuCAS);
- Regional Workshop on Addressing Ageing Management Issues for Structures, Systems and Components during the Design and Commissioning Phases for Light Water Reactors;
- Regional Workshop on Safety Analysis and Regulatory Requirements for Research Reactor Modifications.;
- Fourth Meeting of Self-Assessment Coordination Group;
- Sixth Meeting of the Self-Assessment Coordination Group;
- Annual Meeting of the Information Technology Support Group;
- Annual Meeting of the Regional Advisory Safety Committee for Research Reactors in Asia and the Pacific;
- Annual Meeting of the Topical Group on Communication and Consultation with Interested Parties and Regional Workshop on Sharing Experience with other Regions on Safety Communication;
- Annual Meeting of the Topical Group on Education and Training and Regional Workshop on Management of Training on Nuclear and Radiological Safety;
- Annual Meeting of the Topical Group on Emergency Preparedness and Response and Regional Workshop on Emergency Preparedness for Multi-Unit Nuclear Power Plants;
- Annual Meeting of the Topical Group on Radioactive Waste Management and Regional Workshop on the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management;
- Annual meeting of the Topical Group on Regulatory Infrastructure and Regional Workshop on the Promotion and Assessment of Safety Culture in the Regulatory Body
- Annual Meeting of the Topical Group on Siting and Regional Workshop on Evaluation of Site Selection;
- Fifth Meeting of the Self-Assessment Coordination Group on the Establishment of an Activity Plan for the Period 2018–2020 Based on the Results of Self-Assessment.

5.4.3. The European and Central Asian Safety Network (EuCAS)

- Third Meeting of the Steering Committee of the European and Central Asia Safety Network;
- Second Meeting of the Steering Committee of the European and Central Asia Safety Network;
- Workshop to Share Experiences Related to Regulatory Interactions with Neighbouring States;
- Workshop on Regulatory Evaluation Methodology, and Annual Meeting of the Working Group on General Aspects of Safety Infrastructure under the EuCAS Network;

- Workshop to Share Information on Nuclear and Radiation Legacy Activities, and Annual Meeting of the Working Group on Environmental Remediation under the EuCAS Network;
- Workshop to Share Practical Experiences Related to the Classification of Wastes, Waste Acceptance Criteria, and Waste Treatment, Storage and Disposal, and Annual Meeting of the Working Group on Radioactive Waste Management under the EuCAS Network.

5.4.4. The Forum of Nuclear Regulatory Bodies in Africa (FNRBA)

- Meeting of the Steering Committee of the Forum of Nuclear Regulatory Bodies in Africa (FNRBA) and Coordination Meeting with FNRBA Partners;
- FNRBA Partners Coordination Meeting;
- Meeting of the Steering Committee of the Forum of Nuclear Regulatory Bodies in Africa (FNRBA) and Coordination Meeting with FNRBA Partners;
- Regional Workshop on National Knowledge Safety Platforms (10 people from FNRBA);
- Consultancy Meeting on Radiotherapy;
- Regional Workshop on Model Regulation for Emergency Preparedness and Response;
- Regional Workshop on the Emergency Preparedness Plans ;
- Workshop on Capacity Building Self-assessment and Strategy;
- Workshop on Sharing Results of National Review Services and on Building a Strategy at the Regional Level.

5.4.5. The Global Nuclear Safety and Security Communication Network (GNSSCOM)

- GNSSCOM Technical Meeting on Challenges and Good Practices in Safety Communication ;
- Consultancy Meeting for Developing the Website and 2018 Work Plan of the Global Nuclear Safety and Security Communication Network;
- Meeting of the Steering Committee of the Global Nuclear Safety and Security Communicators Network.

5.4.6. Global Education and Training Resources (GETR)

- Consultancy Meeting on Developing a Basic Train the Trainers Programme in Nuclear Safety Knowledge Management;
- Workshop on the Global Education and Training Resource;
- Consultancy Meeting on the Global Education and Training Resource;
- Workshop on the Global Nuclear Safety and Security Network's Learning Management System.

5.4.7. The Global Nuclear Safety and Security Network (GNSSN)

- Consultancy Meeting on Developing the Safety and Security Culture Network (ASCENT);
- 11th Meeting of the Steering Committee of the Global Nuclear Safety and Security Network;
- 10th Meeting of the Steering Committee of the Global Nuclear Safety and Security Network;
- Regional Workshop on National Nuclear Safety Knowledge Platforms in the European Region;
- Workshop on Regional Websites and National Platforms ;
- Consultancy Meeting on the Nuclear Safety and Security Interface;
- Technical Meeting on National Approaches to Capacity Building;
- Workshop on Nuclear Safety Capacity Building Programmes ;
- Second CS on National experiences and approaches to nuclear safety knowledge management.

5.4.8. The Technical and Scientific Support Organization Forum (TSO Forum)

- Second Consultant Meeting on Action in Research and Development Needs to Support Nuclear Safety Assessment for any type of NPP ;
- 11th Meeting of the Steering Committee of the Technical and Scientific Support Organization Forum;
- 12th Meeting of the Steering Committee of the Technical and Scientific Support Organization Forum;
- Consultancy Meeting for the Identification, Mapping and Promotion of Research and Development (R&D) Projects in the Area of Nuclear Safety through a R&D Knowledge Portal;
- Second Consultancy Meeting on the Development of Guidelines for Building Technical and Scientific Capabilities in Embarking Countries;
- Third Consultancy Meeting on the Development of Guidelines for Building Technical and Scientific Capabilities in Embarking Countries;
- Workshop on Building Technical and Scientific Capabilities in Embarking Countries;
- First Programme Committee Meeting for the Fourth Technical and Scientific Organizations Conference;
- Second Programme Committee Meeting for the Fourth Technical and Scientific Organizations Conference.

APPENDIX I. GOVERNANCE AND STRATEGIC MANAGEMENT

I.1. GOVERNANCE

Effective GNSSN governance⁵ is critical to achieve the GNSSN mission and the commitment for effective and efficient resource management. GNSSN is governed by two bodies: the GNSSN Steering Committee and the GNSSN Governance Board, each with distinct responsibilities.

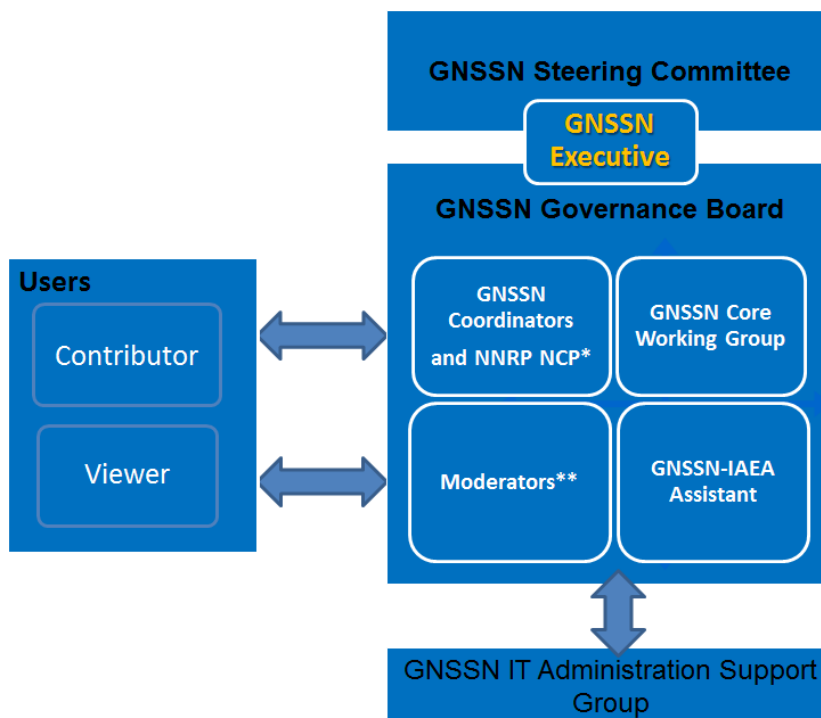


FIG.5: Roles and Responsibilities for GNSSN Governance

I.2. GNSSN VISION

The GNSSN is the gateway to sharing knowledge and services in order to achieve worldwide implementation of a high level of nuclear safety and security.

I.3. GNSSN MISSION

To attain this vision, the GNSSN's mission is threefold:

- (1) Sharing information and knowledge — Ensuring that relevant knowledge, experience and lessons learned related to nuclear safety and security, are managed and shared for the benefit of Member States.

⁵ <https://gnssn.iaea.org/Shared%20Documents/GNSSN%20Documents/The%20Global%20Nuclear%20Safety%20and%20Security%20Network%20Governance%20Plan.pdf>

- (2) Facilitating multilateral cooperation and coordination — Enabling and supporting collaboration and interaction between organizations and subject matter experts
- (3) Capacity building — Establishing a capacity building framework to support the national nuclear safety and security infrastructure in the Member States

I.4. GNSSN OPERATING PRINCIPLES

The six operating GNSSN principles underpin the way in which GNSSN operates:

- (1) **Global:** The GNSSN plays an essential role by ensuring that the world's nuclear safety and security related knowledge resources are visible and available to those who need them, in a format they can access and use.
- (2) **Flexible:** The GNSSN accommodates the diversity and complexity of national nuclear infrastructures, as well as the factors determining their effectiveness.
- (3) **Inclusive:** Participation in the planning and implementation is open to all IAEA Member States.
- (4) **Results-based:** The GNSSN is a practical and results based network. Lessons learned are documented in order to ensure continuous improvement.
- (5) **Self-initiating:** The effective planning and implementation of cooperative activities, especially those in the area of capacity building, are made on the basis of initiatives taken by participating Member States and other stakeholders.
- (6) **Transparent:** The GNSSN promotes trust among members, and enables information and knowledge to be shared in an open and transparent manner.

I.5. GNSSN PARTNERSHIP

I.5.1. Organizations

International, intergovernmental or non-governmental organizations interested in participating in GNSSN activities are welcome, they are asked to submit a letter of interest to the GNSSN Steering Committee indicating their interest in participating.

I.5.2. Networks

Networks interested in becoming part of the GNSSN are to submit their request to the GNSSN Steering Committee.

I.5.3. Individuals

Individuals interested in being GNSSN users need to submit their request to the Coordinator of each respective network.

I.6. CURRENT PARTNERS:

- Arab Atomic Energy Agency (AAEA), Tunisia;
- AREVA, France;
- Argonne Laboratories (ANL), USA;
- Autorite de Surete Nucleaire (asn), France;

- Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit / Federal Ministry of Environment, Nature Conservation, Building and Nuclear Safety, Germany;
- Canadian Nuclear Safety Commission (CNSC), Canada;
- Consejo de Seguridad Nuclear (CSN), Spain;
- European Commission (EC), EU;
- European Nuclear Safety Training and Tutoring Institute (enstti);
- Department of Foreign Affairs, Trade and Development, Canada;
- Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Germany;
- Institut de Radioprotection et de Sureté Nucleaire (IRSN), France;
- Institute for Environmental Protection and Research (ISPRA);
- Korea Institute of Nuclear Safety (KINS);
- Norwegian Radiation Protection Authority (NRPA), Norway;
- Nuclear Regulatory Authority (NRA), Japan;
- Nuclear Safety and Security Commission (NSSC), Republic of Korea;
- ROSATOM, the Russian Federation;
- ROSTECHNADZOR, the Russian Federation;
- Scientific Centre for Nuclear and Radiation Safety (SEC-NRS), the Russian Federation;
- Società Gestione Impianti Nucleari S.p.A. (SOGIN), Italy;
- Radiation and Nuclear Safety Authority (STUK), Finland;
- U.S. Department of Energy/NNSA, USA;
- U.S. Department of State, USA;
- U.S. Nuclear Regulatory Commission (USNRC), USA.

I.7. STRATEGIC MANAGEMENT

GNSSN management relies on strong internal and external processes for ensuring that the strategic goals result in tangible results. It consists of five primary activities:

- Assess the needs;
- Plan for Results;
- Implement;
- Evaluate for results;
- Report on results.

The needs assessment phase is a continuous, iterative process of assessment and adjustment of the GNSSN objectives at both the strategic level and the programme management level. During this phase, inputs from GNSSN stakeholders and national authorities form the foundation for the short-term planning.

The planning phase enables the alignment between the IAEA Medium Term Strategy and GNSSN plans. During this decision making process, IAEA human, technical and financial resource allocation is proposed. This phase ensures alignment with the IAEA internal processes, policies and guidelines and establishes detailed schedules and resources for a successful implementation.



FIG.6: GNSSN Strategic management processes

GNSSN delivers its services through the IAEA programmes and projects during the implementation phase. These processes, which are a series of activities that convert inputs into outputs, are the means by which GNSSN creates outputs and sustains the results for its Member States.

The evaluation measures whether GNSSN achieved intended results/outcomes as stated in the GNSSN Strategic Plan⁶ [Draft], as well as the level of effectiveness and efficiency in delivering the programmes.

The reporting process connects evaluation to the assessment needs. It provides important information and data that will be used by managers to make informed decisions and identify opportunities of improvement in the programme delivery, and programme implementation.

The GNSN Steering Committee has adopted in July 2014 a Strategic Plan that establishes strategic goals and objectives. With this regard, the GNSSN relies on a set of specific and measurable outcomes through key performance indicators. They include important expected outcomes to enable tracking of the GNSSN performance.

⁶ https://gnssn.iaea.org/sites/auth/GNSSN/SC/Meetings/Meeting_04_2014-06-30/Results%20of%204th%20SC/Revised_GNSSN_Strategic-Approach_Rev-SC.docx

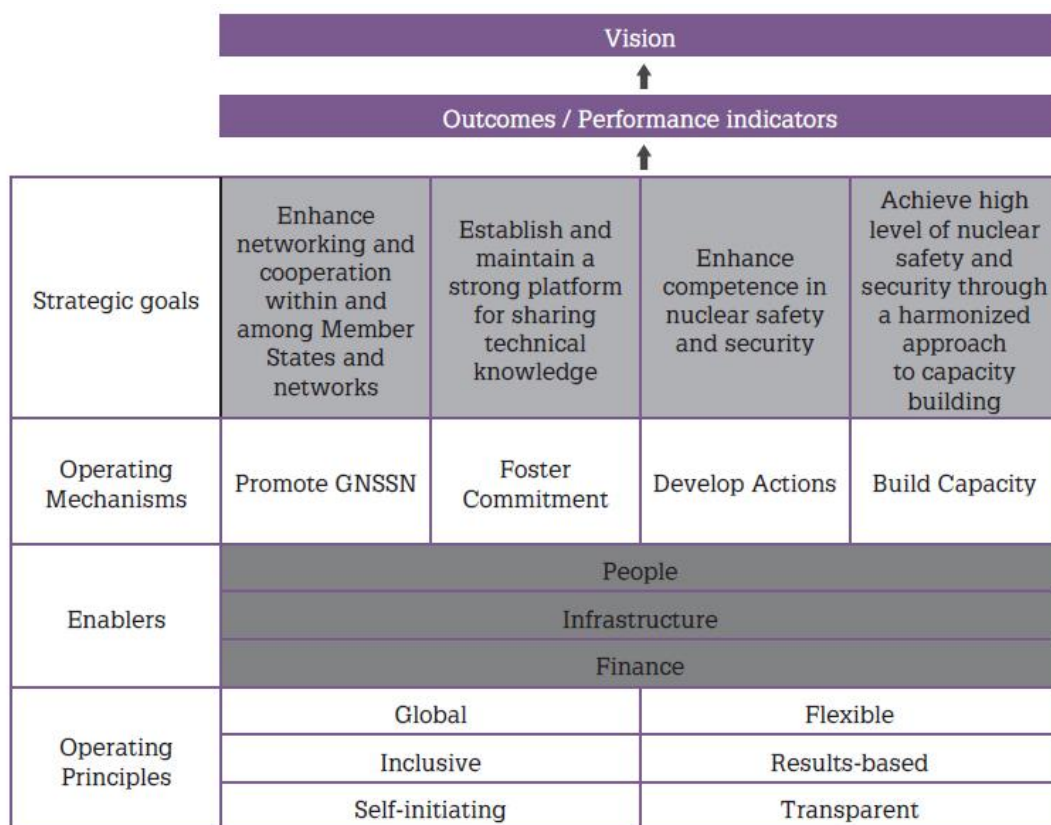


FIG.7: GNSSN Strategic Plan



IAEA

60 Years

Atoms for Peace and Development

Global Nuclear Safety and Security Network

Department of Nuclear Safety and Security

Vienna International Centre, PO Box 100, 1400 Vienna, Austria

<http://gnssn.iaea.org> | GNSSN.Contact.Point@iaea.org