# Task Force Storage (4<sup>th</sup> term)

## Terms of Reference

1. A Task Force is established under the auspices of the TERENA Technical Programme to provide a forum for exchanging and promoting ideas, experience and knowledge, as well as fostering collaborations among National Research and Education Networks and academic and research institutions on the topic of:
   - data storage technologies, platforms and architectures including: datacentre storage and distributed storage, storage clusters, grid and cloud storage, object storage and peer-to-peer storage;
   - storage service and resource delivery models: SAN/NAS/DAS, storage virtualization, private, public and community/hybrid storage clouds;
   - data management technologies, approaches and solutions (e.g., HSM, ILM, iRODS, dCache, OpenStack Swift, Ceph, etc.);
   - data exchange, sharing and synchronization applications and services (e.g., FileSender, ownCloud, PowerFolder, etc.).

2. The Task Force keeps its name as **TF-Storage,** even though its scope is definitely broader than data storage, ranging from clouds, grids architectures and infrastructure to data management, access and preservation approaches, services and applications.

3. The aims of this Task Force are:
   1. to provide **a forum for gathering expertise, exchanging and promoting ideas, experience and knowledge** related to next-generation/augmented data storage technology, delivery models and services;
   2. **to identify, and promote the use of common techniques**, **technology**, **procedures and best practices** in the field of data storage and data management that are relevant to the research and education community;
   3. **to coordinate, support and - where possible - collaborate** on the development, evaluation, deployment and maintenance of storage services and applications for the benefit of academic community and NRENs;
   4. **to address the data privacy issues in storage systems** (especially in cloud storage) by liaising with the TERENA CISO group;
   5. **to address storage systems and identity federations** for transparent access to NREN's storage services, applications and clouds; liaising with TF-EMC2;
   6. **to accommodate the technical discussions on Infrastructure as a Service (IaaS) related initiatives** taken up by NRENs interested in computing, storage and network resource virtualisation and management;
   7. **to liaise with SNIA and other industrial stakeholders and communities and projects** such as GÉANT, Internet2, APAN, EGI, EUDAT, CERN, Helix-Nebula as well as individual developers and researchers.

4.  The Task Force will be open to any individual who can offer appropriate expertise, manpower, equipment or services. Participation will be on a voluntary basis.

5.  The TF-Storage co-chairs and Secretary will jointly lead the task force, and prepare the agenda for each meeting. They will also actively consider the task force's future focus and direction, and solicit and coordinate input from its participants for this purpose. The co-chairs will also coordinate the work of the task force, and are responsible for ensuring that agreed deliverables are produced. The co-chairs of the task force will be Maciej Brzeźniak (PSNC) and Péter Stefán (NIIF)

6.  The secretary is also responsible for taking the minutes at each meeting, and making logistical arrangements in cooperation with the meeting host institution. The secretary will support and contribute to work items, as appropriate. The secretary will be a member of the TERENA Secretariat staff.

7.  The Task Force will operate with a 2-year mandate, starting on the 1st of April 2014. The mandate of the Task Force may be renewed by the TERENA Technical Committee (TTC). If the mandate is not renewed, the Task Force will be dissolved. The Task Force may also be dissolved if the TTC considers that it is making insufficient progress or that its activities are no longer useful or relevant, or if the Task Force chair resigns and no replacement can be found.

8.  The Task Force will traditionally meet at approximately four-monthly intervals. Those physical meetings (with online participation possibility) will be held at various locations, taking care to reduce overall costs to participants by co-locating with other events, local workshop and/or relevant national conferences.

9.  Beside those meetings, regular "social gatherings" will be popped-up ad-hoc on virtual hang-out places (to be agreed e.g., Conversational Wiki, Adobe Connect, Google+, Blogs and Facebook) that are recorded and 'archived' on the web. Virtual working groups and discussion sub-groups will dynamically be created on demand.

10. Reports and other results of the Task Force will be placed in the public domain, with the exception of information that is subject to a Non-Disclosure Agreement.

11. The Task Force will have a mailing list (storage@terena.org) for primary communication between the participants. The mailing list archive will be publicly available. The TF-Storage public Wiki will be available at https://confluence.terena.org/display/Storage/Task+Force+Storage

**List of Work Items**

Following NRENs and research organisations have expressed their interest to contribute to the work items: ACOnet, ARNES, BELNET, CARNet, CSC, CESNET, GRNET, HEAnet, NIIF, NORDUnet, PSNC, RedIRIS, SUNET, SURFnet, SWITCH, UNINETT, RENATER, SRCE, CNRS, ICS-FORTH, NDGF, NWO-NCF, STFC-Rutherford Laboratory, T-Systems, Cisco, Vrijheid.net, ownCloud.
The following work items are considered relevant to the Task Force:

1. **Forum for gathering expertise, exchanging and promoting ideas, experience and knowledge** related to next-generation, data storage technologies and architectures, delivery models, services and applications:
    a. **Technology watch for commercial and open source storage technologies**: including data centre, clustered and distributed storage systems and solutions.
    *Led by: PSNC*
    b. **Overview of (national) storage activities and deployments**: gathering and publishing (on the wiki and possibly in blogs) the information on projects, activities and deployments of storage systems and services.
    *Led by: Heanet*
    c. **On-demand micro-collaboration on ad-hoc well-defined storage topics** that facilitates the sharing of knowledge and workload among individuals for the benefit of their home organisations.
    *Led by TERENA*

2. **Support for the NRENs' initiatives related to storage infrastructure, services and applications development, evaluation, deployment and maintenance:**
    a. **Evaluation, testing** and (possibly) development of **scalable and flexible data storage and management systems (Software Defined Storage)** following the Infrastructure as a Service (IaaS) delivery model or objects/cloud storage model.
    *Led by: PSNC/ACOnet*
    b. **Collecting and publishing cookbooks and best-practices** on cost-effective, reliable storage system design, evaluation and tendering. Establish and maintain liaisons with commercials.
    *Led by: SWITCH/CARNet*

3. **Security and trust in storage systems**: legal and technical implications of directives, laws and security best-practices:
    a. Liaising with TF-EMC2 on **access federations for storage services**.
    *Led by: BELNET*
    b. Addressing the **security models in storage systems**. Liaise with the CISO; considering the **legal implications of EU directives, national laws** and recommendations provided by security organisations (ENISA, NIST) related to data privacy and trust, data handling, transfer, processing etc.
    *Led by: TERENA*

New work items may be added as the Task Force sees fit. TF-Storage will also be observing current and emerging technology and market trends and take up the new architectures, models, approaches and technologies by collaborating within the defined work items.