



EUGridPMA

Status and Current Trends

and some IETF topics

August 2018
APGridPMA Auckland Meeting

David Groep, Nikhef & EUGridPMA

Recent EUGridPMA topics

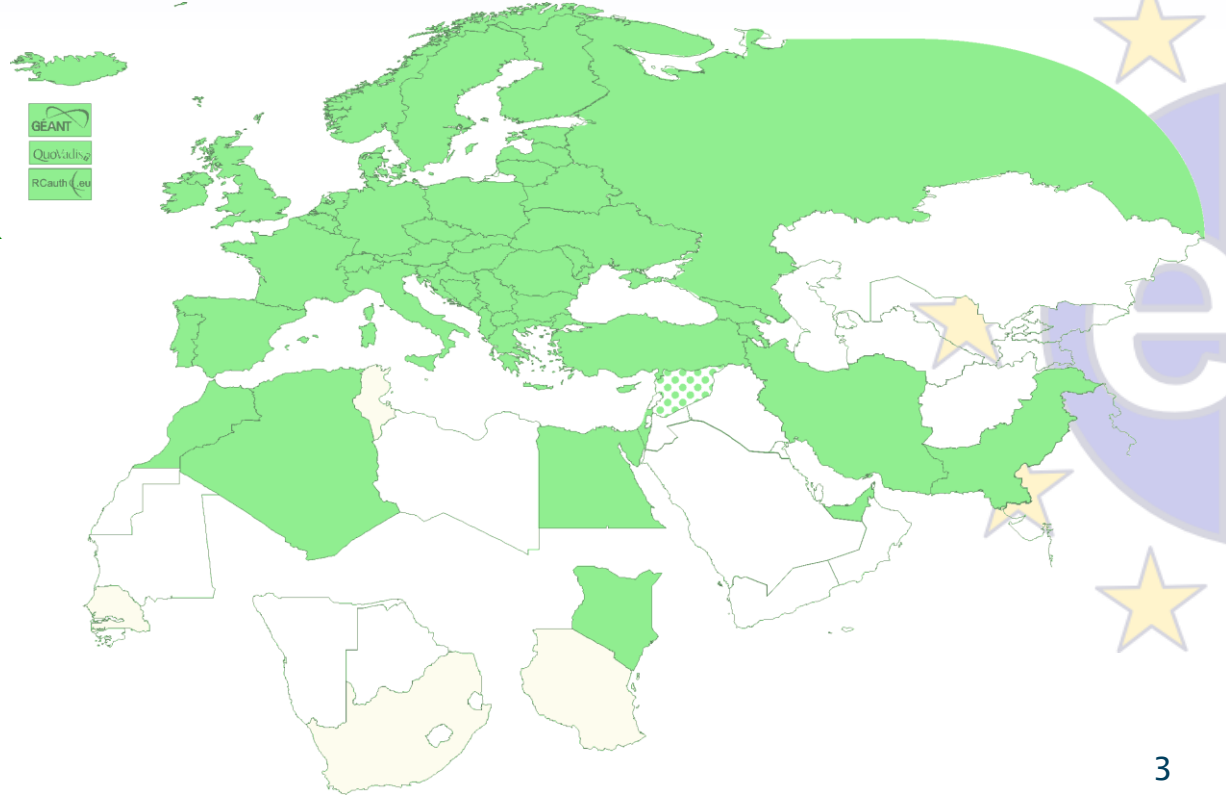
- PMA membership and reviews
- Infrastructure Policy Alignment & AARC
 - assurance frameworks – evolution and components
 - Joint Infrastructure policies
 - Acceptable Use and Conditions of Use
 - Policy Development Kit
 - Attribute Authority Operations
 - Incident response and communications challenges

See also the EUGridPMA43 summary:
<https://www.eugridpma.org/meetings/2018-05/>



Authority coverage in EMEA

- Europe: AT, CY, CZ, DE, DK, ES, FI, FR, GR, HR, HU, IT, NL, PL, PT, RO, SE, SI, SK, UK; AM, GE, IS, MD, ME, MK, NO, RS, RU, TR, UA and the GEANT TCS and EGI *catch-all*
- Middle East: AE, IR, PK
- Africa: DZ, EG, MA, KE
- Multinational: CERN, RCauth.eu, QuoVadis (BM)



Membership and other changes

- Responsiveness challenges for some members
PLEASE take care to renew your trust anchors in time, as well as your CRLs
- Identity providers: both reduction and growth
 - RAuth.eu distributed operations (GRNET, STFC, Nikhef)
- Self-audit review
 - Cosmin Nistor as review coordinator
 - Self-audits progressing on schedule for most CAs

		Specific Policies and Practices			
TR-Grid CA (Turkey) <i>(Authority member)</i> <i>(TACAR OK)</i>	Feyza Eryol	CA TRGrid (accredited:classic): CERT CRL concerns: ca@grid.org.tr A2:31:9E:C8:90:AF:D9:6D:F4:4A:59:31:F2:E6:D2:D5:39:EC:1D:F0	2005-09-29	2016-01-20	2016-01-20 (0.2yr)
Trans-European Research and Educational Networking Association (TERENA) <i>(Relying Party member)</i>	Licia Florio (277707CC)	<i>CP and CPS are not relevant</i> About TERENA: http://www.terena.org/	2004-04-01	2015-09-09	
UK e-Science CAs <i>(Authority member)</i> <i>(TACAR OK)</i>	Jens Jensen (9210F006) David Kelsey	CA UKeScienceRoot-2007 (accredited:classic): CRL concerns: support@grid-support.ac.uk A1:39:80:F3:04:6C:0B:F9:F5:0A:1B:33:00:06:4F:83:6B:7D:4F:3E	2000-12-04	2016-01-20	2014-01-14 (2.2yr)
		CA UKeScienceCA-2A (accredited:classic): CRL concerns: support@grid-support.ac.uk 41:C7:C4:A0:31:F7:07:02:81:C7:61:D5:7E:92:4B:01:DF:87:C9:06			
		CA UKeScienceCA-2B (accredited:classic): CRL concerns: support@grid-support.ac.uk DB:D9:5A:B4:E9:AD:74:26:E0:33:68:AA:B1:77:CC:5B:64:82:C8:0E			
Ukrainian Grid CA <i>(Authority member)</i> <i>(TACAR FAILURE)</i>	Sergii Stirenko Oleg Alienin	CA UGRID (accredited:classic): CERT CRL concerns: ca@ugrid.org 21:E7:0D:EE:D7:57:B6:47:A6:F5:04:29:76:81:FE:CD:E8:48:DD:9A	2008-02-14	2013-09-11	2013-09-11 (2.5yr)
		Generic CP and CPS statements			



AAI in a wider context

IGTF traditionally well-linked to research and e-Infrastructures

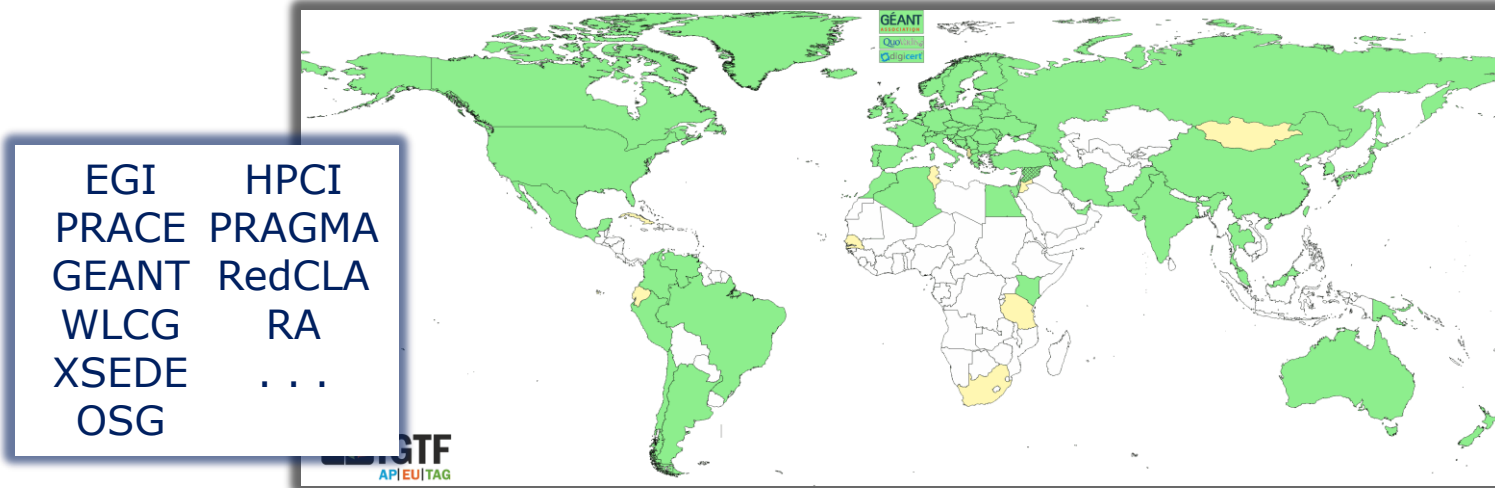
- *support for research use cases*
- *user-centric authentication based on a 'bottom-up' approach*

In Europe, the AARC project supports evolution of 'traditional' R&E federations towards this research and collaboration use

- *common Blueprint Architecture promoting **SP-IdP Proxies***
- *harmonised **policy supporting production use** of federations (Sirtfi and "R&S", non-reassigned identifiers and assurance)*
- *help communities express 'common' qualities through **Snctfi***
- *allow newer technologies (**OIDC**) on the Infrastructure side*

Trust for global e-Science infrastructures

“establish common policies and guidelines that enable interoperable, global trust relations between providers of e-Infrastructures and cyber-infrastructures, identity providers, and relying parties”



Selected topics from EUGridPMA & AARC

- Assurance frameworks – evolution and components
- Joint Infrastructure policies
- Acceptable Use and Conditions of Use
- Policy Development Kit
- Attribute Authority Operations
- Incident response and communications challenges



Assurance and trust frameworks

Identity Assurance Profiles for Infrastructure risk scenarios

<https://igtf.net/ap/loa/>

- BIRCH - good quality (federated) identity,
DOGWOOD - identifier-only with traceability (*R&S+Sirtfi+a few bits*)
- RFC 6711 Registry: <https://iana.org/assignments/loa-profiles>
- technology-specific 'trust anchor' distribution services

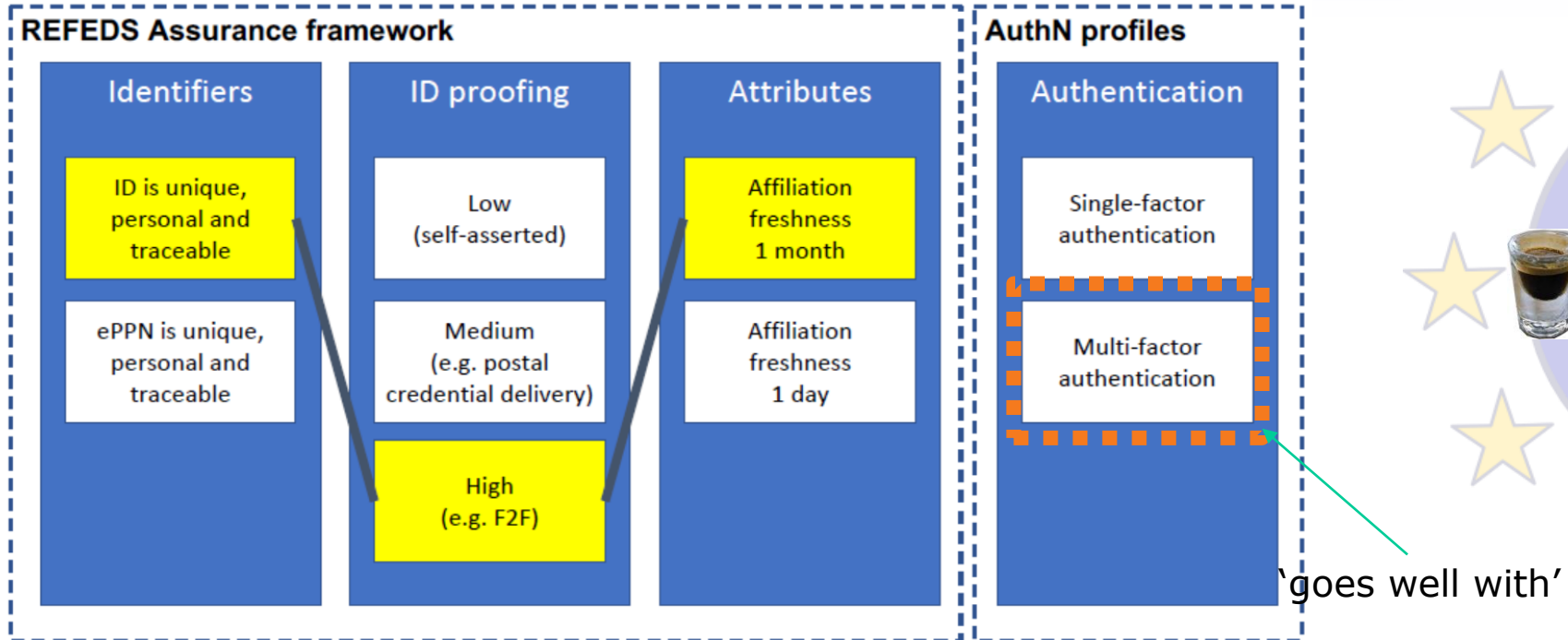
Assurance landscape is becoming more complex again

- 'components of trust' in SP800-63v3, IETF VoT, and in REFEDS RAF
- for Research and collaboration use case use *profiles*,
for home organization IdPs use *components* and REFEDS RAF + [MS]FA



Example: “Espresso” profile for demanding use cases

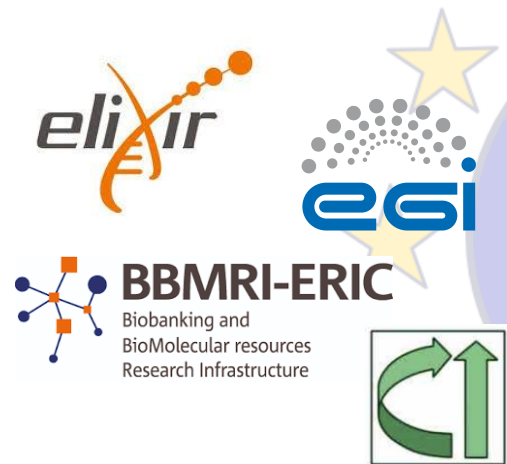
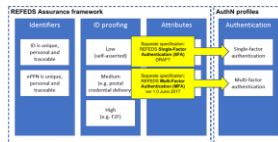
“Espresso” for more demanding use cases



“goes well with”

Using the REFEDS Assurance Framework in practice: the RAF Pilot ☺

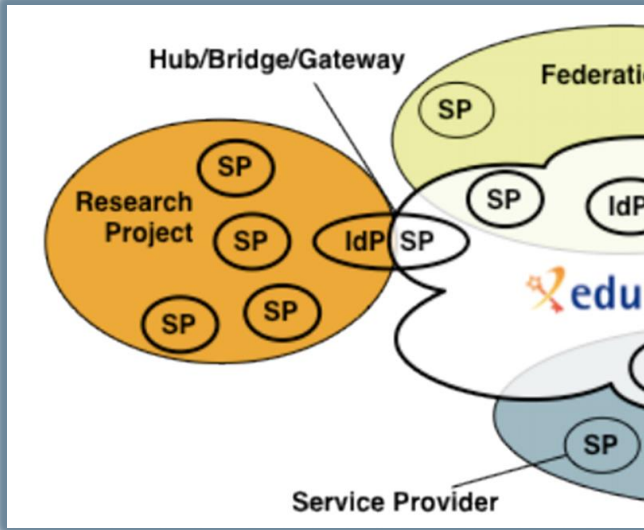
Goal: gain practical experience with Assurance framework *and* REFEDS Single-factor authentication (SFA) profile, both on specification and in deploying existing SAML products



Today: both IdP software (now mostly Shibboleth) can express components and profiles, and use cases can leverage REFEDS assurance profiles (Cappuccino, Espresso) directly

Snctfi: aiding Infrastructures achieve policy coherency

- ✓ allow SP-IdP-Proxies to assert 'qualities', based on assessable trust
- ✓ Develop **recommendations for an Infrastructure's coherent policy set**



Graphics inset: Ann Harding and Lukas Hammerle, GEANT and SWITCH

Snctfi

Scalable Negotiator for a Community Trust Framework in Federated Infrastructures

- Complements Sirtfi with requirements on internal consistent policy sets for Infrastructures
- Aids Infrastructures assert *existing* categories R&S, Sirtfi, CoCo
- Support communities and infrastructures with a *policy kit* and *Acceptable Use Policy* alignment



Re-usable Assurance between Infrastructures

- BPA (community) proxy constructs identity based on multiple sources: home organisation, attributes, linked identities, authenticators – and process these with (community-specific) heuristics
- resulting assurance level may be different from one in home organization – and may depend on intelligence (components) that are not ‘passable’ to the next (infrastructure) proxy
- luckily: number of proxies in an exchange limited, and there’s explicit trust



each BPA IdP-SP proxy should convey its ‘established assurance’

use a **limited number of profiles** targeted at Infrastructure and Services risk levels (not in IdP capabilities)
re-use existing profiles as much as reasonable

AARC-G021
Guideline on the exchange of specific assurance information between Infrastructures

Publication Date	2018
Authors	AARC
Grant Agreement No.	7309
Work Package	W4.1
Task Item	TH4.1
Lead Partner	NHRI
Document Code	AARC
DOI	https://doi.org/10.5281/zenodo.1173558
License	CC-BY

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The research leading to these results has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 7309.

Abstract
Infrastructures and generic e-Infrastructures, yet it is desirable to ensure that it need not be re-computed for each profile. This document describes the assurance profiles: REFEDES RAP, GIP, specific profile addressing assurance.

5.3. Supplementary specific profiles for Infrastructures	
Name	AARC Assam
SAML Identifier	https://aarc-project.eu/policy/assurance/assam
Other Identifier(s)	AARC-Assam
Description	Identity substantially derived from social media or self-signup identity providers (outside the FLE community) on which no further policy controls or qualities are placed. Identity proofing and authenticator are substantially derived from upstream CSPs that are not under the control of the infrastructure. The infrastructure ensures uniqueness on the identifiers based on proprietary heuristics.
MUST	https://aarc-project.eu/policy/assurance/assam
SHOULD	https://refeds.org/assurance/Idunique

Specific assurance information BETWEEN Infrastructures

- from REFEDS Assurance Framework: Cappuccino, Espresso
- from IGTF Assurance Profiles: BIRCH, DOGWOOD (<https://iana.org/assignments/loa-profiles>)
- from the AARC JRA1 use case analysis: Assam – derived from a user-held social identity

Can be extended to social ID between the e-Infrastructures

from assessment:
this level is below DOGWOOD unless specifically augmented by an Infrastructure proxy and registry

Expression of REFEDS RAF assurance components for identities derived from social media accounts

AARC-G041

Publication Date: 2018-03-04 (Final)
Authors: David Groep, Jens Jensen, Mikael Linden, Uros Stevanovic, Davide Vaghetti
Grant Agreement No.: 730941
Work Package: NA3
Task Item: TNA3.3
Lead Partner: Nikhef
Document Code: AARC-G041

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The research leading to these results has received funding from the European Community's Horizon2020 Programme under Grant Agreement No. 730941 (AARC2).

Abstract
Infrastructure Proxies may convey assurance information derived from multiple sources, one of which may be "social identity" sources. This guidance explains under which conditions combination of assurance information and augmentation of identity data within the Infrastructure Proxy should result in assertion of the REFEDS Assurance Framework components "unique identifier", and when it may be appropriate to assert the "identity proofing" component value low.

3. RAF component recommendations

The above-listed consideration lead to the following guidance on asserting assurance component values:

The Infrastructure ID is based solely on a social account, and no additional information has been collected and no heuristics applied to change the assurance.	Assert profile AARC-Assam DO NOT assert any REFEDS RAF component values
The Infrastructure ID is co-based on a social ID, but there are linked identities, either provided externally or based on information independently obtained by the proxy through heuristic or other business logic, that provide additional keys to 'who they are' and that the user is a single natural person and not sharing the account.	Assert profile AARC-Assam ALSO assert https://refeds.org/assurance/ID/unique
The social ID itself is never re-assigned.	
The Infrastructure ID is co-based as above, but in addition either the Proxy or an 'upstream' identity source provides a valid email address through which the user can reasonably be expected to be reached.	Assert profile AARC-Assam ALSO assert BOTH https://refeds.org/assurance/ID/unique and https://refeds.org/assurance/IAF/low

With this combination, the recipient of assurance information from a Proxy can derive unambiguously the status of an account which is based wholly or partially on social media authentication.

Scaling Acceptable Use Policy and da

impractical to present user 'click-through' screens on each individual service

Community specific terms & conditions

Community specific terms & conditions

Community conditions

RI Cluster-specific terms & conditions

Modular approach:
applicable to Sncfi proxies
(also) on behalf of a community

Common baseline AUP
for e-Infrastructures and Research Communities
 (current draft: JSPG Evolved AUP –
 leveraging comparison study and joint e-Infrastructure work)

This allows a layered approach to the construction of the AUP, where the AUP presented to the end-user (on enrolment or later) comprises both the generic JSPG-evolved version plus the community-specific additions.

The LS AAI shall present an Acceptable Use Policy also on behalf of its connected services and infrastructures.

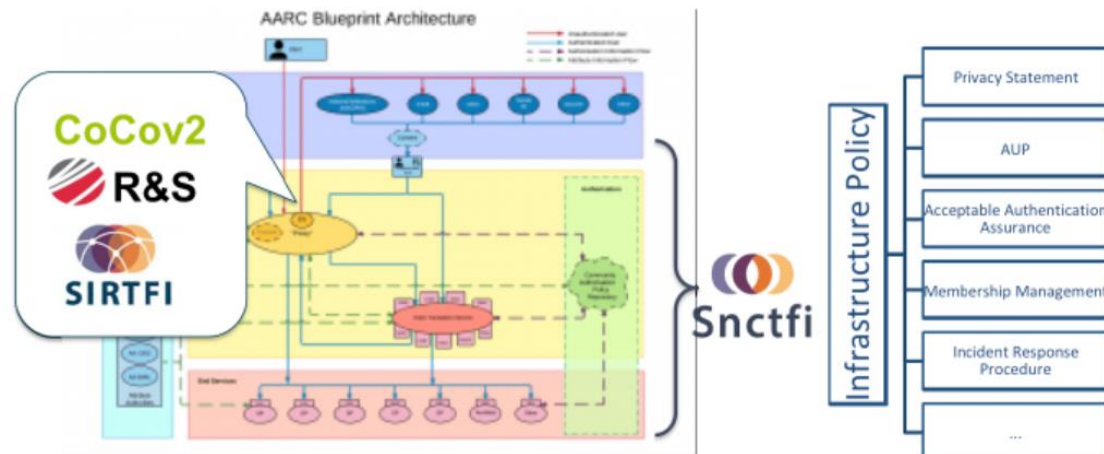
The LS AAI operators shall present as the AUP:

- the common aims and purposes, i.e. the research or scholarship goals of the Life Sciences Research Infrastructures (in a few high-level sentences)
This text must be supplied by the Life Sciences community.
- the list of 11 (eleven) items from the Evolved JSPG AUP [JSPGAUP2]
- a notice that enrolment into specific groups or subdivisions may require the user to sign supplementary terms and conditions, and
- that in specific circumstance also specific services *may* ask the user to sign additional conditions of use.

If the Life Sciences community agrees to any joint clauses ('do not attempt to reverse privacy-enhancing technologies', for instance), these should be included in the LS AAI AUP.

Policy Development Kit

- Bring together a consistent suite
- based on e-Infrastructure best practices in particular EGI, WLCG, and the JSPG



AARC Policy Development Kit

Task Plan & Notes: <https://wiki.geant.org/display/AARC/Policy+Development+Kit>
 Author list: U. Stevanovic, H. Short, D. Groep, I. Neilson, I. Mikhailava

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Attribute Authority Operations

- Extending OpSec and trust capability in the authorization space
- Based on initial IGTF work in 2012, which can now be put on a *Snctfi* basis

<https://www.igtf.net/guidelines/aaops/>

AAOPS as basis for Infrastructure Proxies

Extend scope of 'proper secure authorities'
to the community membership services at
the *Snctfi* Proxy

Bring best practice of *Sirtfi* operational
security for infrastructure proxies to
same level as for identity authorities

This is a **draft** of a document describing the minimum requirements and recommendations for the operation of Attribute Authority Services.

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About this document

This is a **draft** document of the International Grid Trust Federation managed by the [EUGridPMA](#).

In this document the key words **must**, **must not**, **required**, **shall**, **shall not**, **recommended**, **may**, and **optional** are to be interpreted as described in RFC 2119. If a **should** or **should not** is not followed, the reasoning for this exception must be documented by the AASP such that relying parties can decide whether to accept the exception.

Definitions

AA: An Attribute Authority. This is the body responsible for managing the binding between subjects and attributes within a Community. The AA selects an AASP to host AA services.

Communications Challenges

Based on *Sirtfi* incident role play of AARC in eduGAIN:
testing communications channels identified as high-prio target
Initial model might be along the IGTF RAT CC challenges – can be extended later

Question	Response summary (9 responses received)
What went well?	The initial investigation was quick and responsive and Sirtfi contacts largely worked. eduGAIN support was helpful and included federation operators.
What didn't go well?	Lack of coordination. Delay in official alert. It was unclear who should be contacted. eduGAIN was brought in too late. The incident trigger was too vague. Investigation incomplete.



Planned progress

- More exercises, coordinated via WISE
- Improve available tooling
- Set defined roles, including a *coordinator*, and promote eduGAIN security capability GN4-*



Proper OpSec needs to be exercised!

Like the IGTF RAT Communications Challenges, and TF-CSIRT processes, opsec really needs to be exercised often and in-depth to ensure readiness

**Logical candidates that could all run the test against IdPs, CAs, SPs, RPs ...
... and 'legitimately' claim an interest in their results**

- eduGAIN
- IGTF
- GEANT.org
- EOSC-HUB ops, or EGI CSIRT
- each of the e-Infrastructures XSEDE, EGI, EUDAT, PRACE, HPCI, ...
- every research infra with an interest: WLCG, LSAAI, BBMRI, ELIXIR, ...
- any institution (or person) with access to <https://mds.edugain.org/>

so soon: all the email in the world will be about Sirtfi Incident Response tests??



Frequency of challenges and tests - examples

Trusted Introducer and TF-CSIRT

- 2-3 Reaction Tests per year
- supported by web click infrastructure, but requires (team) authentication

SURFcert challenges

- annual response challenges, just reply to email to a (traceable) ticket

IGTF RAT Communications Challenges

- every 1-2 years
- in parallel with continuous operational monitoring

*yet we already listed 14 entities that have a real interest in running tests,
5000+ entities can claim the same*

WISE SCCC-WG proposal – participate!

WISE Community: Security Communication Challenges Coordination WG (SCCC-WG)

Introduction and background

Maintaining trust between different infrastructures and domains depends largely on predictable responses by all parties involved. Many frameworks – e.g. SCI and Sirtfi – and groups such as the coordinated e-Infrastructures, the IGTF, and REFEDS, all promote mechanisms to publish security contact information, and have either explicit or implicit expectations on their remit, responsiveness, and level of confidentiality maintained. However, it is a well-recognised fact that data that is not verified becomes stale: security contact information that is appropriate at time of enrolment in an infrastructure may later bounce, or have different ‘characteristics’.

One of the ways to ensure contact details are maintained is to ‘exercise’ these contacts regularly and compare their performance against the expectations or requirements, in what is usually called

Proposed working group to WISE SC – see wise-community.org and join!



Upcoming PMA events

**EUGridPMA 44,
Toulouse**

September 24 – 26, 2018

TechEx
TNC19

Oct 15-18, Orlando, FL, USA
June 16-20 2019, Tallinn, EE

