RATS Architecture & Terminology

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Major Refactoring

- New **architectural constituents**, e.g...
  - RATS Roles & Principals, and
  - Roles Messages
- ...help to avoid specification text about **RoT & TA**, and
- **disambiguate** terms that are as **simple** as “attestation” or “to attest”.

- Attester Role now includes:
  - **Attesting** Computational Environment
  - **Attested** Computational Environment
- Next to their RATS Duties, these two contexts are specified to be “**separate**” and no more detail is provided, intentionally.
Simplification of Terms

• Terminology was **boiled down** to **four roles** and **five message** types.
• Is more simplification possible? E.g.: Currently, use case semantics sometimes only differ due to the **composition of RATS Roles**, already.
• The current Role & Message **definitions map** appropriately to TEEP, FIDO & TCG subsets of RATS, as well as to solutions, such as EAT, OPv2 (that may become TEEPv1), the RIV use case, CHARRA, and the YANG realm.
• RATS terms are already adopted in other SDO and vendor solutions, while the architecture I-D is still in some churn – the current improvements look very promising.
• **Next steps** to improve readability are a **restructuring** early parts of the I-D (learning curve) and the **continuation of convergence with use cases** (some of which are still a bit abstract).
Structure / Sequence of Content

- To improve readability and comprehensibility, there are two major action items:
  - “All terms go up”, including a concise definition of various roles and messages that today appear too late in the text will also be in the Terminology section.
  - “Clarifying exemplary diagram(s) goes up” to complement the to be up-leveled Terminology section, creating a better intuitive understanding how terms are related.
STD or Informational

• Most recent discussions focused on how this document is intended to be referenced in the future.
• While the architecture is (and will be a tad bit more) prescriptive wrt to what solutions that specify RATS Principals or Roles have to adhere to,
• That does not mean it has to be standards track, though, as it seems today.
  • This has to be confirmed by AD, most likely. Roman? :-)

• In essence, the architecture I-D is intended to specify things, such as:
  • “A RATS Attester Role MUST be able to create attestation Evidence”
  • “Attestation Evidence MUST have [insert here] qualities.”
• This is as far as the “perscriptiveness” of the architecture I-D should ever go.
• Thoughts? Is that an appropriate scope?
RATS Interaction Model(s)

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Terms & Implementation

• The current version of the Interaction Model I-D is now **better aligned** with the Architecture Terminology (but still needs work).

• There is now **running code** – using CoAP, CBOR and CDDL.
  • [https://github.com/Fraunhofer-SIT/charra](https://github.com/Fraunhofer-SIT/charra)
  • BSD 3-Clause "New" or "Revised" License
  • Out-of-the-box development/testing environment (docker)
More Than One Model

- Up to today, the focus was on the **often used**, but **difficult to reference** challenge/response interaction between the Attester Role and the Verifier Role.
- More Interaction Models are now in the queue:
  - Direct Anonymous Attestation (**DAA**)
    - Different attestation provenance
  - **DICE**-based Attestation
    - Different semantics of keys and certificates
  - Time/Clock-Based Attestation (**TUDA**)
    - No nonce required, but trustworthy time synchronization and/or a TSA
RATS YANG Module

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Status Update

- There were two reviews, which is great – but one or two more are better!
- Parallel prototyping efforts in production environments have started.
- Introduction & Background text is in the queue and should be done until the next IETF meeting.
- Composite Device definitions (such as IEEE 802.1AR aggregate device) are almost finished.
- Is there a benefit to introduce the concept of composite device (for RATS Principals taking on the Attester Role) in the Architecture I-D?