Agenda Item: GUP DDF
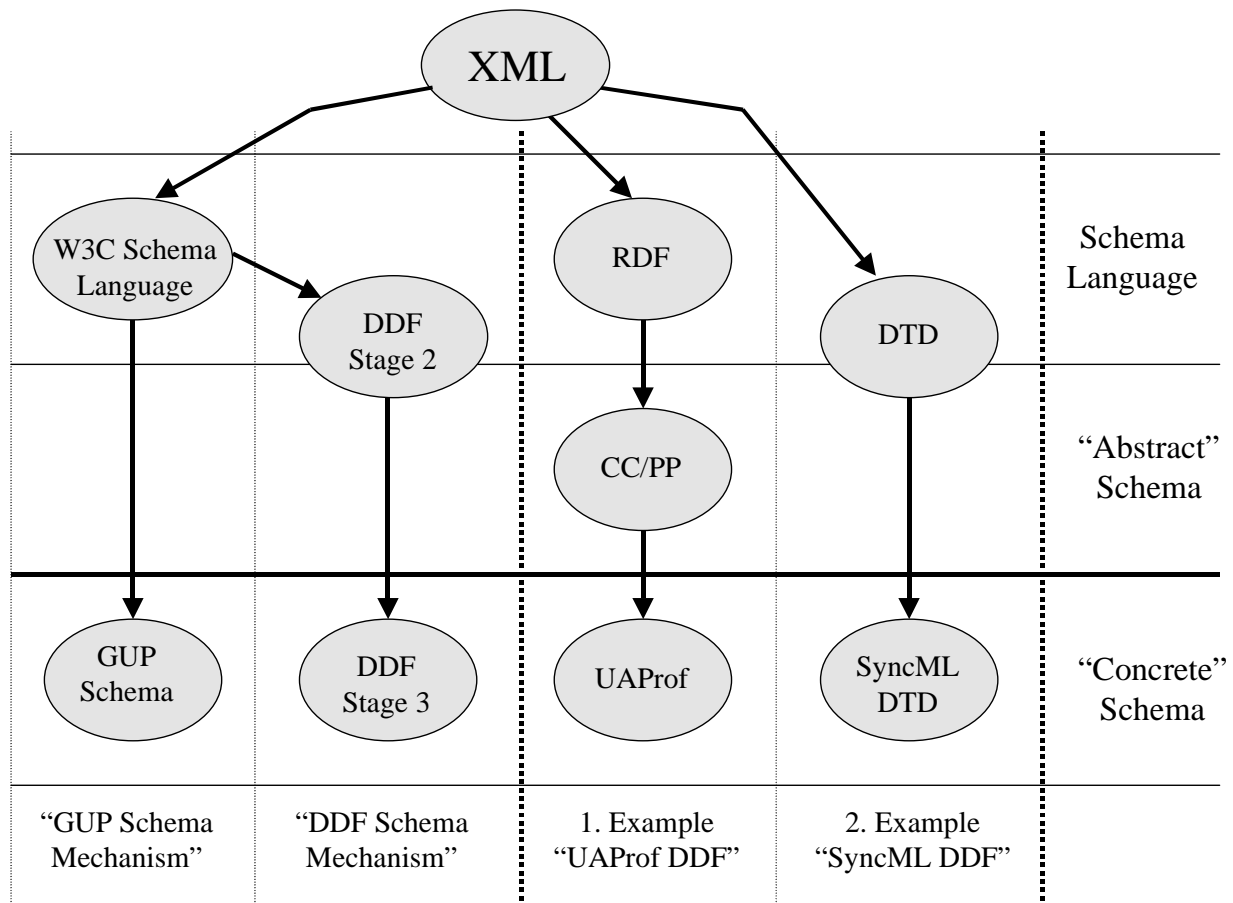
Source: Siemens

Title: Thoughts on T2 compromise regarding GUP XML schemas

Document for: discussion and decision

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In SA2 delegates raised concerns on the need of GUP DDF. It was asked to consider the possibility of using existing XML schema mechanisms from outside 3GPP. As a result T2 was asked by SA2 to justify the benefits of the GUP DDF work.

During T2#18 in Velen a compromise was reached between supporters of GUP DDF and companies that would prefer to reuse the W3C XML schema language. The compromise proposes to distinguish between "abstract" and "concrete" schema mechanisms. Such a differentiation may be useful to compare both approaches and might help to clarify differences and similarities. Depending on the importance of the identified differences it could be justified or rejected to keep both alternatives. At the moment there is no clear T2 analysis of the differences available. Basing a decision on the current T2 comparison outcome seems to be a bit arbitrary. In the same way as T2 decided to keep both solutions it might have been concluded that DDF and the W3C-based approach are two equivalent solutions for GUP schema mechanisms. In this case we would have to choose a single 3GPP solution instead of permitting the coexistence of two alternatives and I would question that the current T2 compromise is a reasonable way forward for 3GPP. When the differences are insignificant the coexistence of two solutions would merely double the work in 3GPP and at the end companies would ignore one of the schema solutions.

Because of the consequences for the future work on GUP schema mechanisms DDF and the W3C-based approach should be compared in more detail.

In order to avoid misunderstandings the classification of schema mechanisms into "abstract" and "concrete" needs to be clarified. In the given context "abstract" should mean generic schemas which are applicable to different technologies. "Concrete" are schemas that are developed for a particular application.

For instance SyncML DTD is the "concrete" SyncML schema of the "abstract" DTD (Document Type Definition) because it defines schema elements, like data types, for SyncML as a particular application. The "concrete" schema may be transformed to different transport formats (e.g. WBXML) and is independent of the transport protocol. Therefore the WAP UAProf specification can allow two different transport protocols – Wireless Profiled HTTP and a WSP/HTTP combination.

Furthermore a "concrete" schema could be applied to various access methods. SyncML is an example where many access aspects are unspecified for enabling a wide adoption of SyncML.

GUP DDF is based on XML. The DDF stage 2 specification provides an "abstract" XML schema language and the stage 3 specification contains "concrete" XML schemas for particular 3GPP features.

The DDF XML schema language is mainly derived from the W3C XML schema language by language restrictions. For example the predefined DDF data types are a subset of the W3C primitives and in contrast to W3C new DDF data types may only be derived form predefined data types. These restrictions can ease the handling, understanding, and electronic processing of user profiles. The resulting benefits for the GUP stakeholders give a reason to specify an own 3GPP schema language. Nevertheless the DDF XML schema language is strongly related to the W3C specification.

The DDF stage 3 specification utilises the "abstract" rules of the DDF stage 2 specification for the definition of "concrete" data types. In the same way it would be possible to refer to the "abstract" W3C rules directly without having the DDF language modifications. Again it depends on the chosen viewpoint whether the "concrete" DDF definitions or the "concrete" W3C-based schema should be preferred.

These relationships between DDF and the W3C solution are illustrated in the following picture.

XML

| Schema Language | "Abstract" Schema | "Concrete" Schema |

Diagram nodes:
- XML (top) branches to: W3C Schema Language, RDF, DTD
- W3C Schema Language → DDF Stage 2
- RDF → CC/PP
- Schema Language row: W3C Schema Language, DDF Stage 2, RDF, DTD
- "Abstract" Schema row: CC/PP
- "Concrete" Schema row: GUP Schema, DDF Stage 3, UAProf, SyncML DTD
- W3C Schema Language → GUP Schema
- DDF Stage 2 → DDF Stage 3
- CC/PP → UAProf
- DTD → SyncML DTD

| "GUP Schema Mechanism" | "DDF Schema Mechanism" | 1. Example "UAProf DDF" | 2. Example "SyncML DDF" |

Furthermore the picture shows the similar classification into "abstract" and "concrete" for SyncML and WAP which are mentioned as examples for "concrete" schema mechanisms in the T2 LS. The illustration highlights that UAProf and SyncML DTD are no "concrete" schemas of "abstract" 3GPP schemas. They are based on own schema languages and "abstract" schemas. UAProf DDF and SyncML DDF are additional, independent data description frameworks comprising "abstract" and "concrete" schemas. There is no relationship between such existing solutions and the activities on 3GPP GUP schema mechanisms. From the very beginning it was not intended to replace existing data description frameworks like the WAP UAProf specifications with GUP DDF. The 3GPP DDF specifications will only be applied to features not yet using own data description frameworks.

Conclusion:

We must prevent the standardisation of two equivalent 3GPP XML schema mechanisms for the same purpose. Only essential benefits would justify a coexistence. Such benefits are not yet identified by T2. For this reason I propose the following actions:

- Ask T2 to identify essential benefits for a coexistence of two 3GPP schema mechanisms
  If T2 can't find such benefits then a proposal for a single solution has to be worked out (see note below).
- Send an LS to SA2 stating that T requests a more detailed analysis on the matter and that the final decision has to be based on the T2 analysis outcome

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Note:

Some time ago a similar discussion on the need of an own XML schema language came up in ISO/IEC JTC1 SC29. For the description of MPEG-7 meta data the work on a new Description Definition Language started. The plan was cancelled as it was recognised that a conformance to widely adopted standards offers advantages for MPEG-7. Instead of designing a new solution MPEG-7 refers to W3C. "Concrete" MPEG-7 requirements are incorporated by extending the W3C XML schema language. Mainly a number of new data types like time-point, time-duration, and matrix were added.

I wonder if this way forward might be the possible basis for a beneficial compromise in 3GPP. We could use the W3C specifications and add specific 3GPP requirements. Some of the current 3GPP restrictions can be achieved via available XML schema language parameters. Remaining essential 3GPP characteristics could be introduced with a few language extensions which recommend or mandate required changes but do not cause conflicts with W3C XML schema tools.

Thus, if we can't reach an agreement to choose either DDF or the W3C solution then we could try to merge the interests.