

PAR Methodology for IEEE 1588

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An IEEE standard can be enhanced by submitting a Project Authorization Request (PAR) [1] to the IEEE Standards Association (IEEE SA). Generally speaking, IEEE SA provides two methodologies for publishing enhancements to a standard. The following is intended to provide an informal explanation of these methodologies, and the working plan for the IEEE 1588 Working Group.

Revision Methodology

The Working Group creates a project (i.e. submits a Revision PAR) to revise the entire content of the standard. The PAR can limit the scope of the revision to specific features, but all features are typically done together.

Amendments-with-Rollup Methodology

The Working Group creates multiple projects for Amendments (i.e. submits many Amendment PARs) to the currently published standard. A single Amendment is focused on a set of similar enhancements, typically one or more new features that are related. Each Amendment is published by IEEE SA as a standalone document with lowercase letters after the published standard's name (e.g. IEEE Std 802.11ac). The content of the published Amendment is phrased as changes to the currently published standard (e.g. "add the following as a new clause 29", or "delete text as shown (using strikeout font)"). The Working Group can create multiple Amendments, such that development on each is overlapping in time.

After a certain number of Amendments are published, the Working Group creates a Rollup Revision. Technically this is a Revision PAR according to IEEE SA procedures, but the work of the Rollup Revision is limited to 1) merging all published Amendments into the previously published standard, and 2) fixing bugs. The result of the Rollup Revision is a complete published standard without marked changes. After the Rollup Revision is published, subsequent Amendments are made relative to that Rollup Revision. Therefore, the result to the standard's consumer is a sequence of published revisions, much like the Revision methodology described above.

For bug fixes, IEEE SA offers another type of project called Corrigendum. The PAR for a Corrigendum is limited to bug fixes. The overall process for Corrigenda is analogous to the process for Amendments. Since an Amendment can fix bugs, and the Rollup Revision typically also fixes bugs, Corrigenda are often used for more urgent problems that require the quick turnaround that a Corrigendum provides.

Working Plan for IEEE 1588

In the past, the IEEE 1588 Working Group used the Revision methodology. IEEE Std 1588-2008 was a Revision of IEEE Std 1588-2002, and IEEE Std 1588-2019 was a Revision of IEEE Std 1588-2008.

Examples of standards that use the Amendments-with-Rollup methodology include IEEE Std 802.11 and IEEE Std 802.3.

As a standard grows in size, with multiple applications / industries that require new features, the Revision process can become unwieldy. The Amendment methodology allows the IEEE Working Group to break up features into more reasonable pieces, and to distribute that work among multiple editors. The Amendment methodology also enables the IEEE 1588 Working Group to publish new features at a faster pace. For those familiar with software development methodologies, as an analogy, the Revision methodology is more "waterfall", and Amendments-with-Rollup is more "agile".

Due to the preceding factors, the IEEE 1588 Working Group is transitioning from the Revision methodology to Amendments-with-Rollup, i.e. submitting Amendment PARs that target specific aspects and occasional Revision PAR to perform Rollup Revision.

References:

[1] IEEE Standards Association / Project Authorization Request:
<https://standards.ieee.org/faqs/pars.html>