

MPEG-I Scene Description *Software and Tools*

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MPEG-I Scene Description Reference Software



- **Reference software and conformance**
 - ISO/IEC 23090-24
- **Python-based reference software**
 - mpegtrimesh
- **Open source trimesh project taken as baseline**
 - glTF parser rewritten
 - MPEG module that implements MAF and Buffer API
- **The reference software is available under:**
 - <https://gitlab.com/mpeg-i/scene-description/mpegtrimesh.git>



MPEG-I Scene Description Reference Software



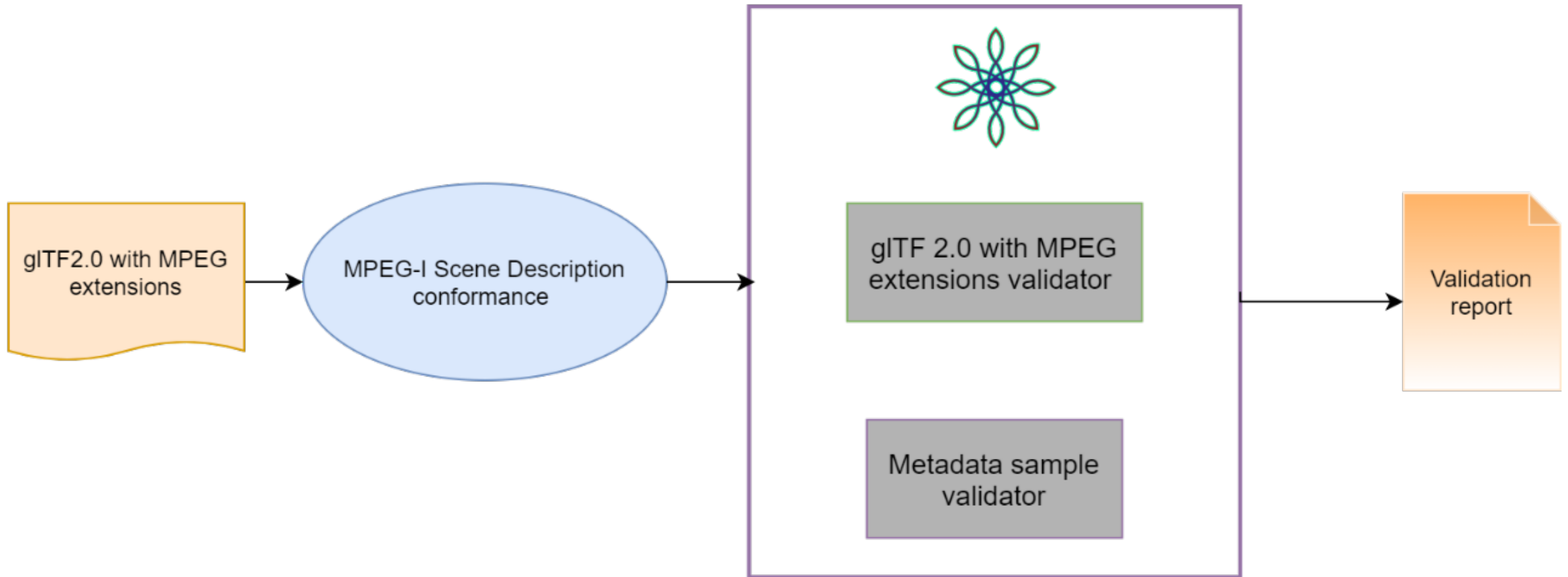
- **MAF implemented using Factory design pattern**
 - New formats supported through new pipelines
 - Pipeline registers with factory
 - At runtime, factory instantiates the proper pipeline based on information in the MPEG_media extension
- **Supported MPEG SD extensions (so far):**
 - MPEG_media
 - MPEG_accessor_timed
 - MPEG_buffer_circular
 - MPEG_audio_spatial
 - MPEG_texture_video

MPEG-I Scene Description Procedures



- **Define a *Test Scenario***
 - For each new feature
- **New tools and extensions have to be associated with a test scenario**
- **The tool/extension needs to be implemented in the reference software**
- **The test scenario comes with:**
 - A glTF file with the new extensions
 - All assets used by the scene
- **Validation**
 - Cross-validation by other proponents
 - Extensions/tools that don't get validated are removed from the specification

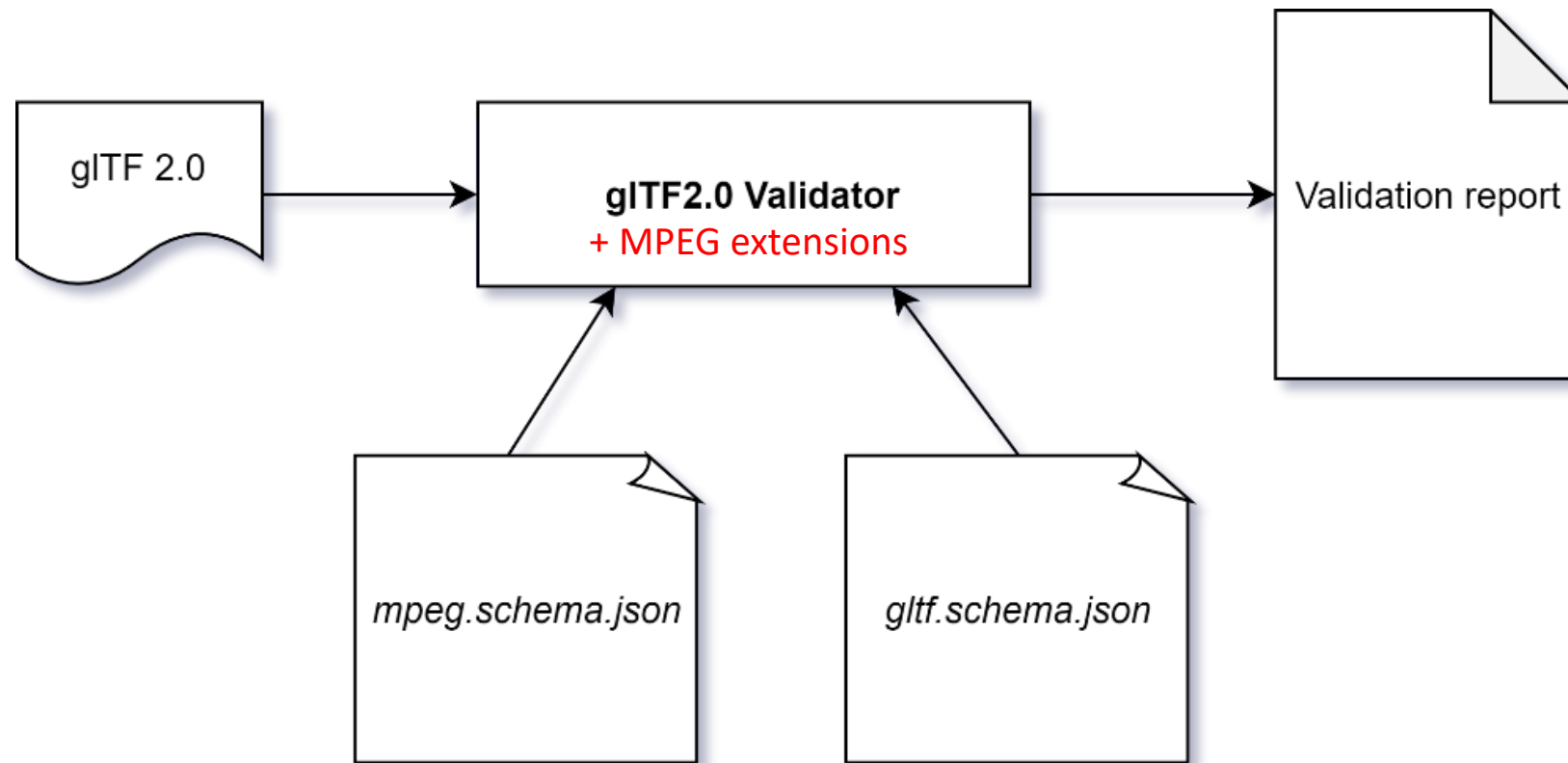
MPEG-I Scene Description Conformance Suite



MPEG-I Scene Description Extensions Validator

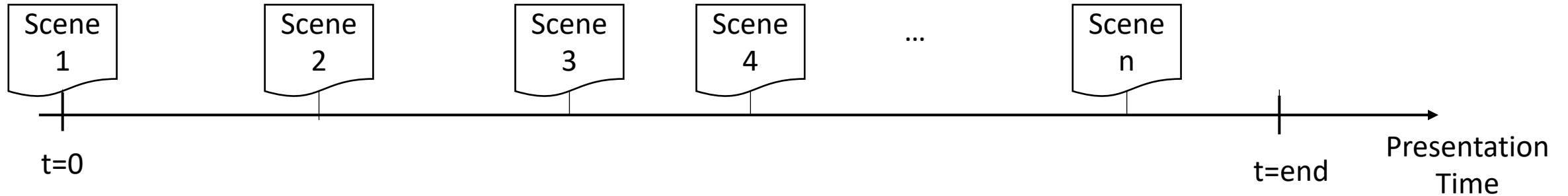


- Extends Khronos glTF-Validator to include support for validation of MPEG extensions



MPEG-I Scene Description

glTF Scene Sequence Generator



- **Purpose**

- Programmatically generate glTF scenes and scene sequences
- EE to validate random access capability and evaluate efficiency and behavior of potential solutions

- **Input**

- Number of scenes in the sequence
- Initial number of objects
- Number of update operation between scenes
- Presentation duration of the sequence

- **Output**

- Sequence folder with 1 folder for each scene in the sequence
- Each scene saved as .gltf and .glb
- Scene updates are randomly distributed
- Object are randomly updates

- **Misc.**

- Python 3+
- trimesh
- BSD 3-Clause Clear License

An aerial photograph of the Manhattan skyline at sunset. The sun is low on the horizon, casting a warm orange glow over the city. The Manhattan Bridge is prominent, spanning the Hudson River. In the foreground, a modern building with a circular roof is visible on a small island. The water reflects the sunset colors.

Thank you!

