

X3D Specification Activities

... fasten your seat belts!

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X3D Working Group
Web3D Consortium
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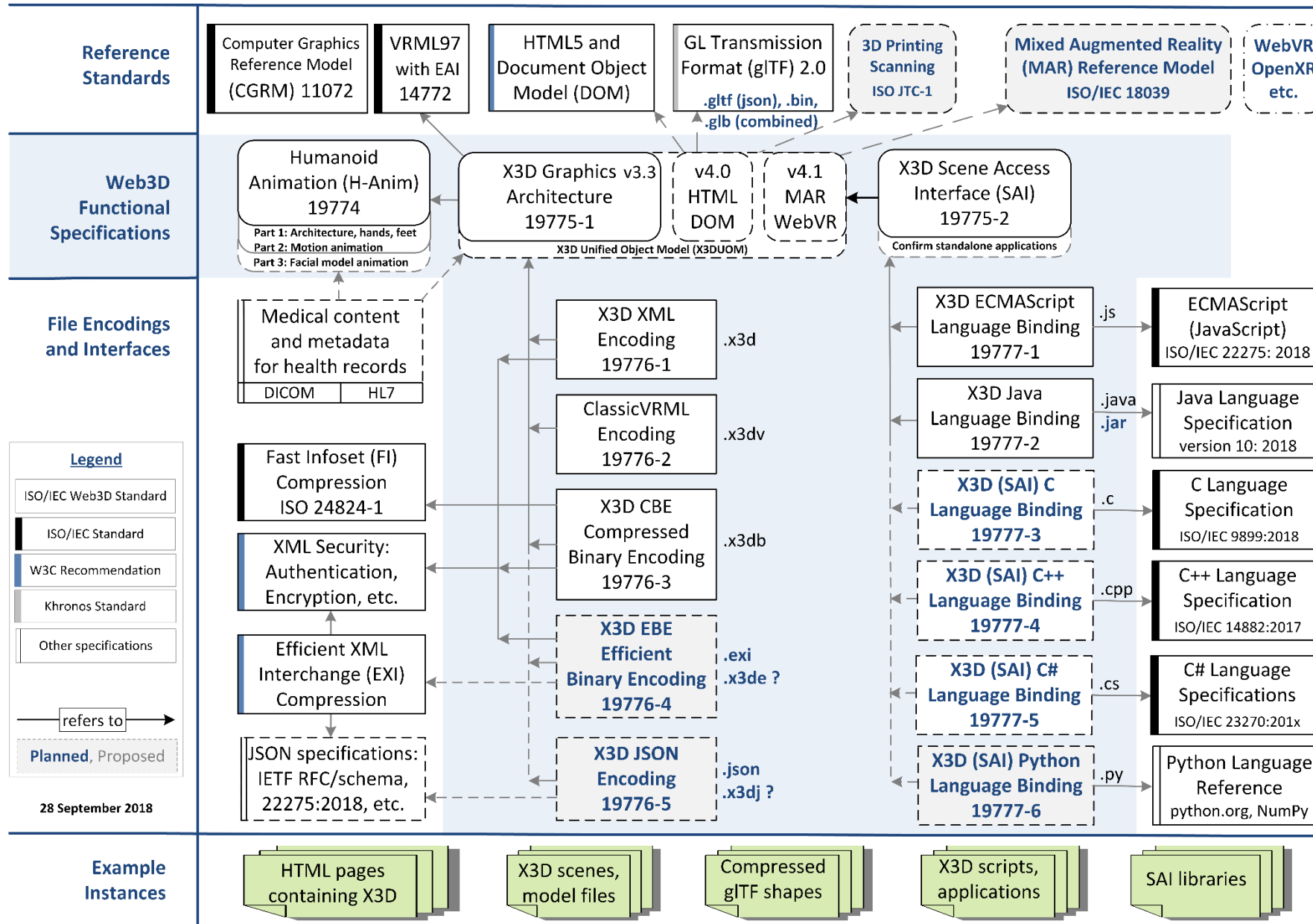
First...

Many thanks to Korea Chapter of Web3D Consortium for

- Many sustained and stellar technical efforts
- Collegial and constructive efforts
- Organization and coordination
- Foresight and Vision

X3D Specification Relationships

X3D Graphics Standards: Specification Relationships



Standards progress and plans

1

- H-Anim 2 Architecture and Motion Capture
 - implementation efforts for X3D: schema is now published
 - Issue: rename to HAnim: simplify search, unify document/program representations
 - Issue: review, address ISO editor
- X3D Scene Access Interface (SAI)
 - Current status is up to date, small errata being encountered
 - Some changes may be desirable based on new language additions
- X3D C, C++, C#: NWIP approved, work in progress.
 - Sharable soon, we hope?
- X3D Java SAI: implementation mature, specification review/update
 - automatically updating X3DJSAIL codebase with X3D v4 changes
- X3D Python SAI: implementation in tandem with Java
 - ISO NWIP and initial-draft specification document by SIGGRAPH

Standards progress and plans

2

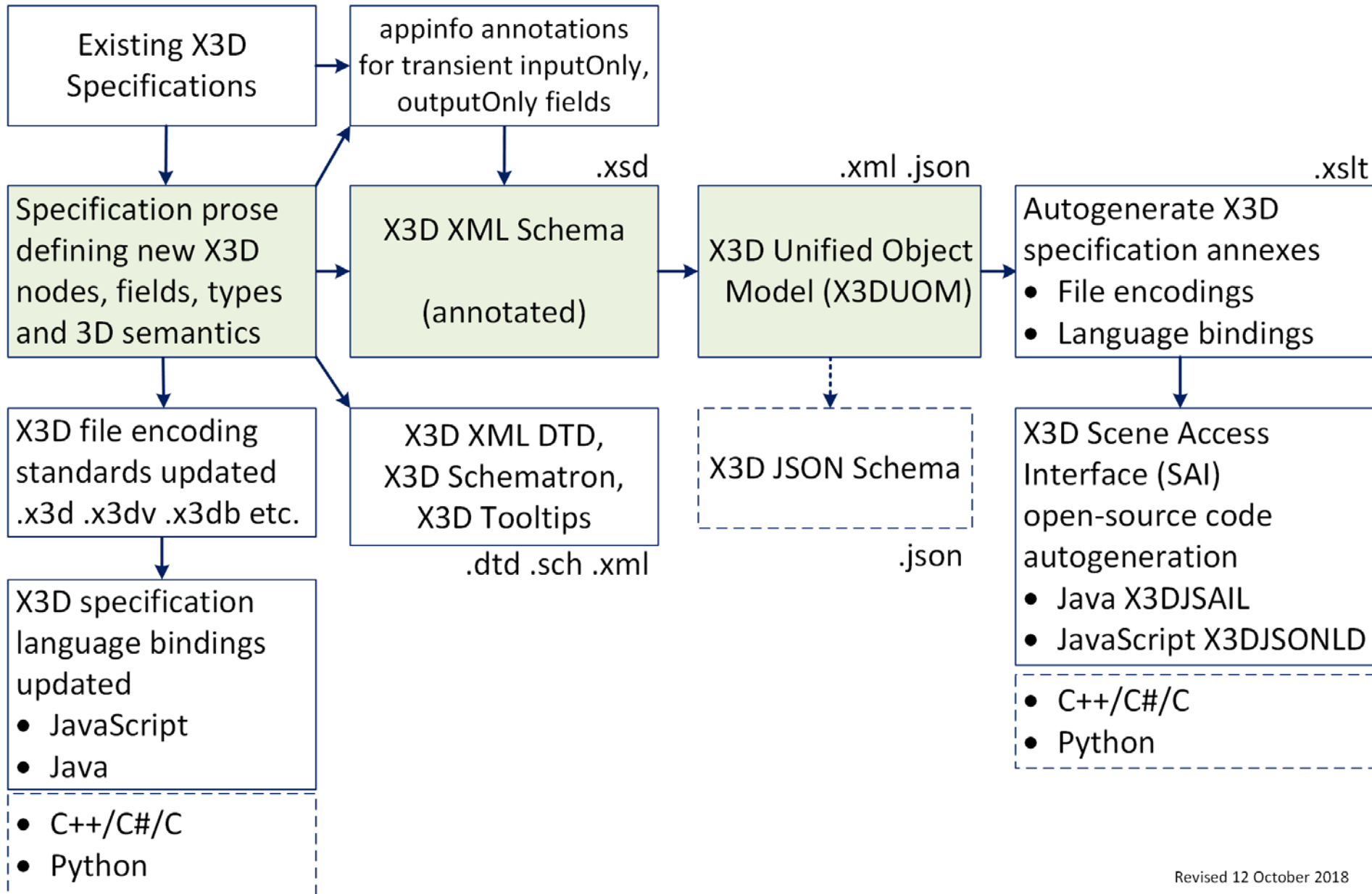
- [X3D JSON Encoding](#): implementation mature, JSON schema evolution, first-draft specification, NWIP needed
- [X3D 4.0](#) for HTML5/DOM/CSS, [development in progress](#)
 - Many components proposed, increasing participation
 - Two open-source JavaScript implementations guarantee successful execution
 - Three additional open-source implementations (C++, Pascal, Java) also active
 - Will begin listing assets online
- [X3D 4.1](#) Mixed/AR/VR/XR, progressing in tandem
 - Will build on W3C WebXR Immersive Web working group (meeting next week)
- [Strategies to Improve X3D v4 Sound Component](#) renewed activity
 - Dependency, partnership on W3C Audio

Standards progress and plans

3

- Data-centric security: applying implementations
 - XML Encryption for privacy
 - XML Authentication for authentication
- Metadata and Annotations
 - Printing and Scanning
 - Medical
 - Computer Aided Design (CAD)
 - Cultural and Natural Heritage
- [X3D Unified Object Model \(X3DUOM\)](#) is mature – specify within X3D v4?
- [X3D Semantic Web Working Group](#) is now approved and has begun, building X3D Ontology, portions likely autogeneratable using X3DUOM

X3D Unified Object Model (X3DUOM) Creation



Projective Texture Mapping (PTM) Component

- Initial draft added to Github X3D Specifications
 - First edit to occur this week. Several iterations for continuous improvement.
- Next: add to XML Schema
 - Then X3DUOM, X3DJSAIL, DTD, X3D Tooltips
 - February X3D Working Group Review, confirm it is a separate component. Add as component.
 - X3D Schematron validation heuristics (if any) as diagnostics for X3D Validator.
- Implementations
 - Existing: FreeWrl has implemented, X3DOM (proposed)
 - Recommended: X3DOM, X_ITE (either means both) for broad deployability as X3Dv4
 - Suggested: Castle Game Engine
- Examples Provided, Need to be Published
 - X3D Basic Examples Archive (most likely)
- Review, finalize, submit paper. Take care to ensure that no legal problems occur.

Discussion: legal considerations useful

- All prose, content submitted for ISO Specifications must be under [Web3D Consortium Intellectual Property Rights \(IPR\) Policy](#).
 - Members also have “safe haven” private review if desired, but with prior agreement that all accepted technology is royalty free (RF) for any use.
- Authors can also publish papers either before a specification (reporting on graphics advances and experimentation) or afterwards
 - ... and retain copyright ownership rights for such documents throughout
- Authors benefit from broad, rigorous implementation and evaluation
- Public and industry benefit from royalty-free standards that can last.
- Win-win-win situation built on proven track record of broad success.

Catalysts

- Coherent functionality among all file encodings, language bindings
- [Github version control](#) for Web3D member access to draft specifications
- Steadily increasing validation capabilities ensure high quality models
 - also facilitates rapid software development
- Increased availability of X3D codebases to support export and import
- Insistence on example scenes for all new components enables
 - better sharing and mutual testing
 - demonstrated adoption of other standards
- Events: Web3D and SIGGRAPH Conferences, regular ISO meetings, etc.
- Web3D process, community, archival mailing lists, and Mantis issue tracker

Gating factors and challenges

Giant understatement: **A Lot of Work is Going On!**

- Communication Communication Communication !!!
- Coordinated efforts on design, documents and implementations
- Continuing growth into many areas needing 3D portrayal on the Web

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