



Welcome to the Opening Plenary Meeting!

6th July 2022

We will start at 7AM PT

Please Mute and name yourself 'Your Company: Your Name'
(mouse over your name in the Zoom participant list)

[Google Slide version of this presentation](#)



Meeting Logistics

- Please mute and name yourself 'Your Company: Your Name'
 - Mouse over your name in the Zoom participant list, click More>, Rename
- This slide deck will be posted to the Forum Portal
 - <https://portal.metaverse-standards.org/>
 - With a meeting summary and Zoom transcription/attendance
- This meeting is being recorded
 - The recording will also be posted to the Forum Portal
- Logistical problems or questions?
 - Ask in chat, we will try and reply in real-time
- **We want to gather everyone's real-time comments and questions**
 - **Please type them into chat, which will be saved**
 - Any questions we can't answer during the meeting will be answered in the post-meeting summary



Legal

- All Forum meetings and online communications shall be conducted in compliance with all applicable laws, including antitrust and competition laws
 - Do NOT discuss the interpretation, validity, or essentiality of patents/patent claims
 - Do NOT discuss specific license rates, terms, or conditions
 - Do NOT discuss or engage in the fixing of product prices, allocation of customers, or division of markets
 - Do NOT discuss the status or substance of ongoing or threatened litigation
- All Interactions on the Metaverse Standards Forum should follow our [Code of Conduct](#)
 - Please keep all discussions professional, friendly and civil
- Don't be silent if inappropriate topics are discussed or you feel unsafe or unwelcome – formally object to the discussion immediately
 - To the meeting chair
 - Email operations@lists.metaverse-standards.org
 - File an [Anonymous Report](#)



Agenda for Today's Meeting

- Forum Introduction
 - Neil Trevett, Khronos
- Making the Forum Action-based
 - Marc Petit, Epic Games
- Organizing for Effective Action
 - Neil Trevett, Khronos
- Metaverse Standards Registry Project
 - Dominique Hazael-Massieux, W3C and Christine Perey, Perey Research
- SIGGRAPH Metaverse Course
 - Patrick Cozzi, Cesium
- Wrap up, Actions and Next meetings
 - Neil Trevett, Khronos



Metaverse
STANDARDS FORUM™



The Vision

**A Venue for
Cooperation between
Standards Organizations and Companies to
Foster the Development of
Interoperability Standards for an
Open and Inclusive Metaverse**



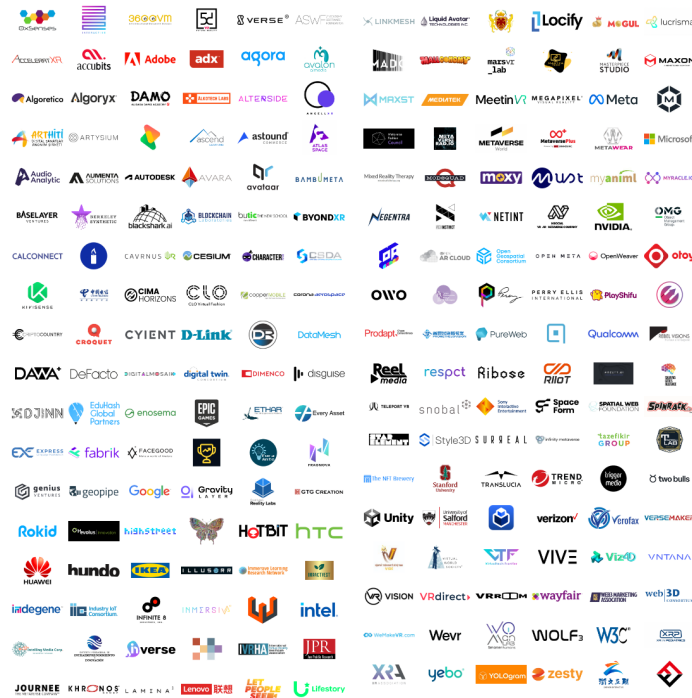
Metaverse
STANDARDS FORUM™



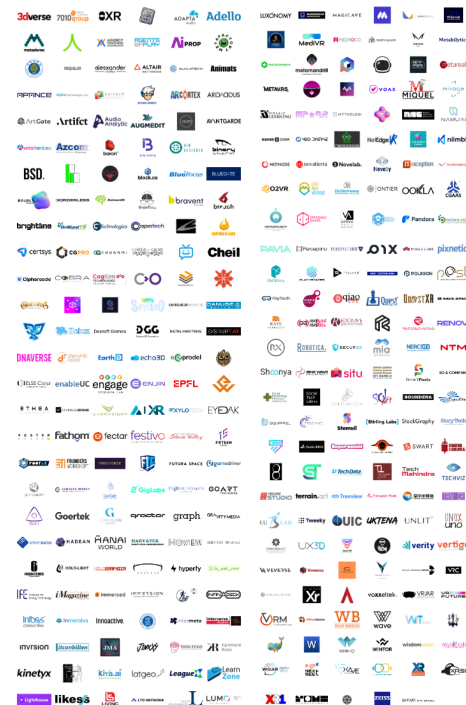
Over 650 Members and Counting

- Amazing response to the Forum launch!
 - Thank you all for your participation and support!
- A unique opportunity
 - For broad cooperation, coordination and building wider awareness and participation in standardization
- Also, a unique challenge!
 - How to enable meaningful discussion and effective action with such a diverse membership?

Principals



Participants



We appreciate your suggestions and patience as we develop effective cooperative processes together

Logo not correct on the Forum web site?
Ensure your logo is uploaded at the Portal [Member Logo Folder](#) and email operations@lists.metaverse-standards.org



Fostering Metaverse Interoperability

What will the metaverse be?

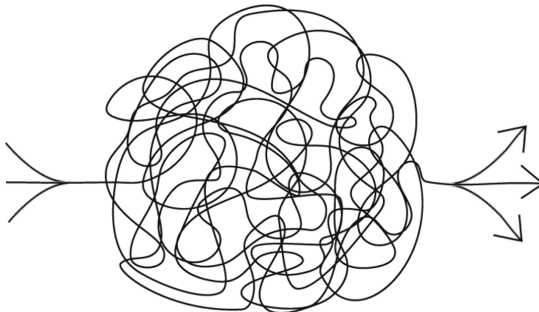
Some mix of the connectivity of the web with the immersiveness of spatial computing
We can start baking interoperability 'bricks' before we know the detailed plan for the whole metaverse 'cathedral'

Diverse technologies will need to work together in novel ways – driving the need for a constellation of interoperability standards

Synthetic visual reality, practical XR optics, real-time environment scanning and semantic understanding, end-user 3D content creation tooling, accurate physical simulations, effective remote social interactions, servers scaling to millions of simultaneous users, streaming of vast geospatial data sets, real-world geo-anchoring with persistence, universal digital twins, online personas and social connections, realistic avatars, universally sharable consumer assets, security, privacy, interoperable run-times, online economies and currencies, IOT sensor networks, pervasive low-latency wireless connectivity ... and many more

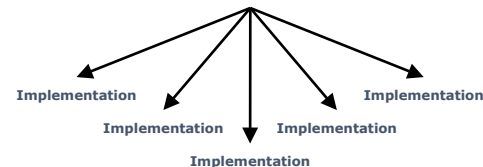
...

Darwinian Evolution



Standards enable pervasive deployment of proven technologies to build market opportunities for all

Open interoperability standard specifications and conformance tests



Metaverse Standards Forum Mission

Identify TODAY'S interoperability pain points and coordinate pragmatic action to help solve them through standardization



Metaverse
STANDARDS FORUM™

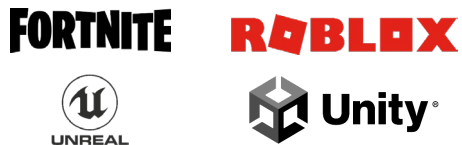


An Action-based Forum – Marc Petit, Epic Games

- The Forum can have a positive industry impact through real-world projects to test and exercise interoperability
- E.g., 3D Asset authoring and runtime 'Plugfest'
 - All tool, engine and platform vendors invited to participate
 - Open-source code and assets openly shared



Tools create assets
using open standards



Run time engines ingest and
process interoperable assets



USD-based tools

Author assets and
publish into glTF



DISTILL



Web-based Configurator

Material variants



TRANSMIT



Runtime Demos

Open door, start engine
Drive course with physics
simulation



Forum Portal and Online Tools

- Anyone with a member domain email address is welcome to [get a Portal account](#)
- Group-based
 - Email, calendar, document share per Group
- [General](#) Group includes everybody
 - Please be thoughtful before emailing such a large group 😊
- Will establish more Groups as needed for specific Domains/Projects
 - Members can subscribe and unsubscribe from any Groups they wish (other than General)
- Check out the [Portal User Guide](#)
- Will host additional online tools such as GitHub, Discord etc. as needed
 - Post-meeting Member Polls will enable members to express preferences

The screenshot displays the Metaverse Standards Forum Portal dashboard. At the top, there is a navigation bar with the text "Welcome, Neil | User Settings | Public Site | Sign Out" and a search bar. Below this is a secondary navigation bar with tabs for "Dashboard", "News", "Documents", "Discussions", "Wiki", and "Calendar". The main content area is divided into several sections:

- General Quick Links** (highlighted with a red box):
 - Welcome to the Metaverse Standards Forum Portal!
 - Please ensure your company logo is correctly uploaded to a named subfolder in the Member Logo Folder, this will be used on the Forum Web Page.
 - All members are welcome to make Introductions, ask Questions about the Forum, suggest and upvote Forum Topics on a shared Google Sheet.
 - Here are some other useful links:
 - A Guide to using the Portal
 - Forum Logos and Artwork
 - Forum Presentations
 - Join the Forum Zoom line
 - The email address of the Forum General group (reaching all Forum users): all@lists.metaverse-standards.org
 - If you have any questions or suggestions on the operation of the Portal, please email operations@lists.metaverse-standards.org
 - Interactions on the Metaverse Standards Forum should follow our Code of Conduct, which prohibits aggressive or derogatory language. Please keep discussions friendly, professional, and civil.
- General News**:
 - Forum Press Coverage Summaries Posted by Neil Trevett - NVIDIA Jun 23, 2022
 - Buttons: Add Article, View All
- Group Details**:
 - Chair: Neil Trevett (ntrevett@nvidia.com)
 - Newest Members: Choak Visavayodhin - Debuz, Yetzari Bonilla - Ecoprodel, jiaxin wu - Shenzhen Link Accessibility Co., Ltd.
 - Buttons: View Full Member List (highlighted in red), Export Member List
 - Buttons: Email Administrator, Membership Settings, Email Group
- General Documents**:
 - Files: HAND (square logo).png, HAND (banner logo).png, Artifact Full White.png
 - Buttons: Download, Upload Document
- General Discussions**:
 - Thread: The Basic Linux Distribution...for Development... (Jul 5, 2022, 5:24 PM)
 - Thread: Metaverse Standards Forum Plenary Meeting (Jul 5, 2022, 4:43 PM)
 - Thread: Metaverse term confusion (Jul 5, 2022, 2:49 PM)
 - Buttons: Post a Message, View Archives
- General Calendar**:
 - Event: Metaverse Standards Forum Plenary Meeting (Jul 6, 2022, 7:00 AM)
 - Event: Metaverse Standards Forum Plenary Meeting (APAC) #1 (Jul 13, 2022, 6:00 PM)
 - Event: Metaverse Standards Forum Plenary Meeting #2 (Jul 20, 2022, 7:00 AM)
 - Buttons: Add Event, View Calendar
- General Wiki**:
 - Page: Code of Conduct (Jul 5, 2022)
 - Buttons: Add Page, View Wiki



Organizing for Effective Forum Action

Gather wide member input online
Establish smaller, focused groups ASAP

1. Gather interoperability Topics from all members

Tools to gather member input

Plenary Meetings
Topic Brainstorm [Google Sheet](#)
Additional online tools - suggestions welcome!

Some examples so far

Metaverse Standards Registry
Physics simulation
Avatars
ID Framework
3D Apparel and Fashion
Metaverse traversal
3D Asset Interoperability
Geospatial ontologies
Payment frameworks
Ethical framework
Geospatial streaming
Privacy
Asset LODs
Metaverse Pharmacy

Actionable topics that need improvement today!

2. Organize Topics into Domains

Build consensus on where there is strong member interest AND the Forum can add industry value
(i.e., Forum has meaningful quorum and expertise, and is thoughtful about cooperation with external organizations)

Some possibilities so far
Metaverse Standards Registry
3D Metaverse Assets
Geospatial
User Identity and Login
Networking
Ethics and Privacy
Avatars and Apparel
Payments
Tooling and Creators
Runtimes/Object Models
Real/Virtual World Integration
XR and UI
Health and Medical
...

3. Create Domain Working Groups

Focused discussions with smaller group size
Elected Domain Working Group Chairs

Self-organizing, including meeting schedule
Dedicated Group on Portal and additional online resources as needed

Generate Project Proposals

Project Lead
What
Why
How
Who
Funding?

Project Proposals approved at Oversight Meetings

4. Create Project Subgroups

Focused on specific project execution
Elected Subgroup Chairs

Self organizing, including meetings, project planning and execution

5. Publish Project Work Products

Examples

Standards Registry
Guidelines and recommendations
Open-source tooling
Plugfest resources and reports
Standards *Requirements* to pass to Standards Developing Organizations
...

The Forum does not create interoperability standards itself. It fosters their creation at Standards Developing Organizations by communicating requirements, priorities, hosting 'plugfest' resources and projects and more ...



Standards Developing Organizations in the Forum

- Let us know if your organization is a Standards Developing Organizations (SDO) and not included here!
- Suggestions welcomed for additional SDOs we should invite to the Forum



Web Standards



Run time APIs and file formats



Geospatial Standards



XRSI Privacy and Safety Framework



IOT and Digital Twins

IEEE P2874



VFX and Animation



Connecting physical and digital worlds



Avatars



Concept Management



X3D



Information Models



Scheduling



Volumetric Format Association

Volumetric Video



Standards Registry Dominique Hazael-Massieux & Christine Perey

- Deliverable
 - Comprehensive, interactive landscape of standards activities with potential to enable Metaverse interoperability
- Value proposition
 - Expose where there are Metaverse Standards efforts (past, present, future)
 - Identify where standards need to work directly with one another (seams)
 - Identify where interop is needed but no standards work is happening (gaps)
- Who
 - Leaders (and other representatives) of participating SDOs
 - Developers with direct experience using these standards (separately and together)
- How
 - Collaborative registry populated and maintained by SDOs and community members via Web-based tools
 - Editors reviewing contributions and contextualizing standards
 - Free to search and use
- [Draft Project Proposal](#)
- Inspired by:
 - [W3C Mobile Web Roadmap](#) [W3C Media Roadmap](#) [OGC Roadmap](#) [MPEG Strategic Standardization Roadmap](#)
 - [AREA Research Agenda Dashboard](#)



SIGGRAPH Course – Patrick Cozzi, Cesium

- Building the Open Metaverse Full Day Course at the upcoming SIGGRAPH conference
 - Wednesday, August 10, 2022 in Vancouver
- Discussing fundamental concepts and building blocks for the open metaverse, covering the current state and potential future directions. Themes of openness, collaboration, and interoperability
 - Continuation of last year's BOF and podcast: <https://cesium.com/open-metaverse-podcast/>
 - Organized by Marc Petit from Epic Games and Patrick Cozzi from Cesium
- Current speakers include:
 - Neal Stephenson, Cofounder, Lamina1 and Author, Snow Crash
 - Rev Lebedev, VP Omniverse & Simulation Technology at NVIDIA
 - Morgan McGuire, Chief Scientist at Roblox
 - Nadine Alameh, President at OGC
 - Neil Trevett, Khronos President
- Details being added to <https://cesium.com/building-the-open-metaverse-siggraph-2022/>
 - Reach out: patrick@cesium.com



Forum FAQ

- Is the Forum going to try to 'define and solve the whole metaverse'?
 - No! The focus will be on practical, actionable interoperability projects that can 'move the needle' on aspects of the metaverse that are needed by member consensus. We are 'baking the open standard bricks' for the metaverse, not 'building the cathedral'
- Is the Forum a new standards organization?
 - No, the Forum will coordinate requirements and support for existing SDOs developing standards relevant to the metaverse under their existing governance and IP Policies
- Who is paying for the Forum?
 - Khronos is funding the administrative hosting of the Forum during its bootstrap phase. Projects that need funding will be voluntarily funded by Forum members
- Why is Khronos acting as host?
 - Promoting industry cooperation is part of Khronos' non-profit mission, our membership has requested we help bootstrap the Forum as an open, neutral forum for the benefit of all. Khronos has no special Forum privileges

See more [detailed FAQ](#) on the Forum Website

We will add answers to any frequently occurring questions

Member questions about the Forum are welcome on the [AMA/FAQ Google Sheet Tab](#)



Wrap up, Actions and Next Meetings

- Any feedback on the presentation and suggested processes today welcome on email!
 - Will send meeting summary on General email list ASAP
- Remind any colleagues that wish to participate to get their [Portal login](#) for email and calendar updates
- Use the Forum Google Sheet to tell us about yourself and ask questions about the Forum
 - If you wish, introduce yourself on the '[Introductions](#)' [Google Sheet Tab](#)
 - Ask any Forum-related questions in the [AMA/FAQ Google Sheet Tab](#)
- Watch out for Forum Polls on email to gather Member input on logistical topics, e.g.,
 - Should we use Chat or stick to email?
 - If we want chat, what are the preferred tools that can be used in all geographies? Discord? Mattermost?
 - Would members like the opportunity to create testimonial videos as [suggested](#) by Nav @ Chaarmi Worlds?
- **Add topics that you would like to see the Forum cover** into the [Topic Brainstorm Google Sheet Tab](#)
 - Real-world topics that are actionable today please!
- Upcoming meetings will be in the [Portal Calendar](#) and sent to the General email list
 - [Forum Plenary Meeting APAC #1](#) at 6PM PT Wednesday July 13th
 - Will cover the same agenda as this meeting but in an APAC-friendly time slot
 - Any members are welcome to attend, but no new topics
 - [Forum Plenary Meeting EMEA #2](#) scheduled at this 7AM time slot for July 20th
 - Will start prioritizing Topics and Domains that the Forum should address





Metaverse

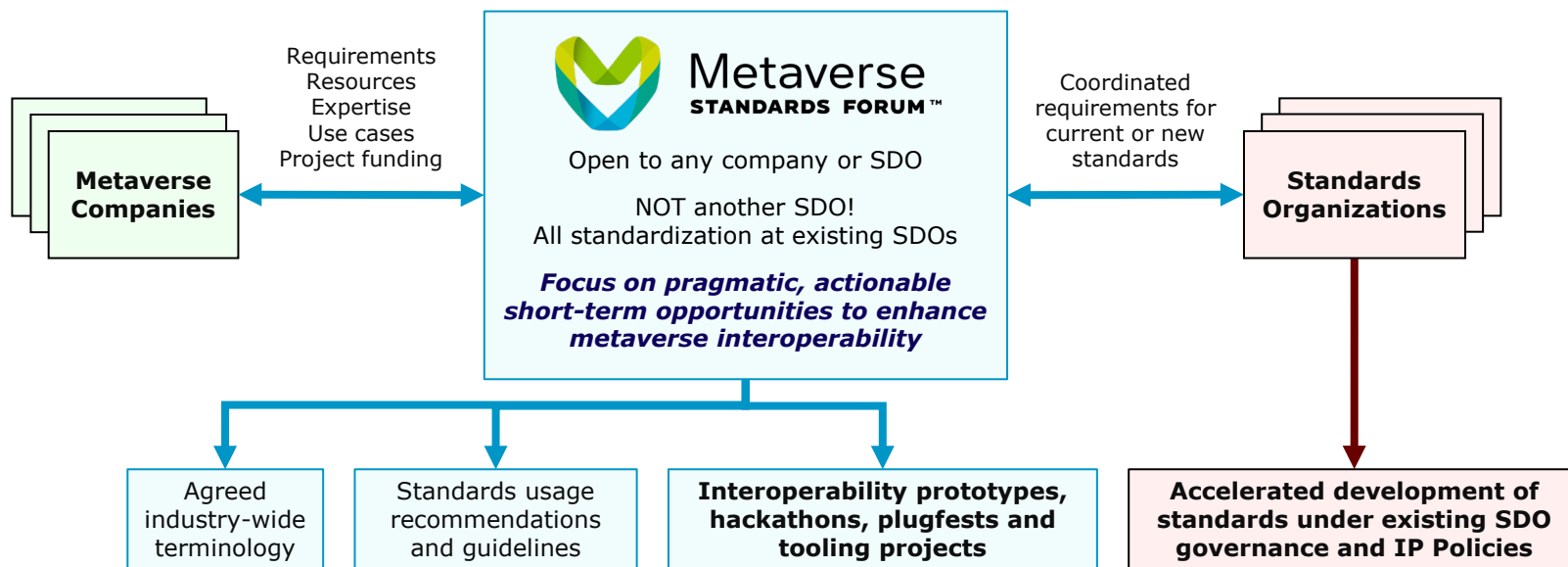
STANDARDS FORUM™

Standards Cooperation for an Open
and Inclusive Metaverse

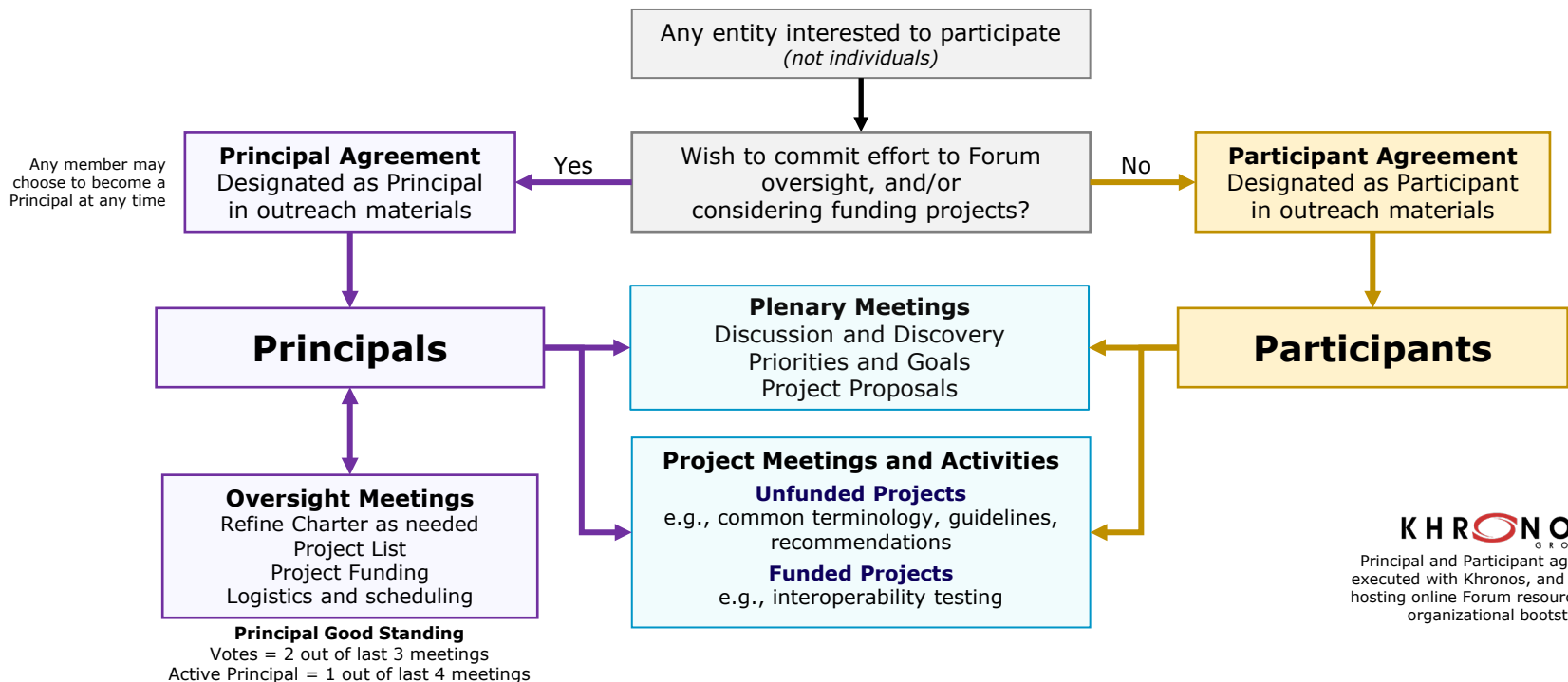
metaverse-standards.org | [@Metaverse_Forum](https://twitter.com/Metaverse_Forum)

Metaverse Standards Forum

- Industry-wide forum to coordinate and encourage metaverse interoperability
- Open to all, no participation fee, no NDA, no IP framework
- Coordinated cooperation between industry and Standards Developing Organizations (SDOs)



Forum Membership and Organization



KHRONOS
GROUP
Principal and Participant agreements
executed with Khronos, and Khronos is
hosting online Forum resources for fast
organizational bootstrap

