Jul 23, 2026

UNTP Technical WG

Summary

Tech group strategy discussion on regulatory independence and complex data validation architectures via custom middle-layer standards.

Status and Regulatory Strategy
Public review issues reached 62 items through automated triage. The group determined that prioritizing independent, globally adaptable standards remains essential given limited influence of current EU regulatory frameworks.

Technical Validation Architecture
Discussions centered on implementing Graph Validation to translate human-readable rules into executable code. Participants debated whether custom middle-layer formats adequately solve ambiguity versus adopting existing formal specifications like Shackle.

Decisions

Needs Further Discussion

- **Graph validation architecture methodology** The architectural approach for graph validation, specifically the proposal to implement a middle layer to convert human-readable English rules into an intermediate JSON structure for downstream technical translation, requires further discussion and review of alternative frameworks.

Next steps

- ☐ [Harley Thomas] Push local work: Upload development files to the server and share access with Albert.
- ☐ [Albert Verdeny] Review issue list: Analyze 62 items from the public review to determine contribution areas.
- ☐ [Harley Thomas] Consult Steve: Determine repository configuration for reference implementations through a discussion with him.
- ☐ [Albert Verdeny] Research SHACL: Analyze the extent to which SHACL supports complex constraints including sums and aggregates.
- ☐ [Albert Verdeny] Review Proposal: Evaluate the project proposal and provide feedback via the pull request.
- ☐ [Albert Verdeny] Research Implementations: Investigate alternative industry implementations that address the requirement for interpretability and shared constraints.

Details

- **Tech Working Group Status**: Harley Thomas noted that the group paused meetings during a recent public review phase. They successfully triaged 62 public review issues using AI tools, identifying many as low-hanging fruit, such as wording corrections or minor fixes, while others involve complex topics like long-term durability and accreditation.
- **Global Regulatory Strategy**: Adrienna Zsakay emphasized that many issues raised originate from EU-based perspectives, creating challenges for global application due to the EU's specific regulatory framework. They discussed the risk of "fitting into the EU" versus maintaining independence, noting that the EU and US represent only 8% and 4% of the global population, respectively. Consequently, there is a strategic need for the UNP to remain independent and adaptable to non-EU markets, especially given the growing economic influence

of the Asian middle class and pushback against EU regulations like China's Decree 834 and 835.

- **Introduction of Albert Verdeny**: Albert Verdeny joined the call, introducing themself as an expert based in Germany with a background in data science and sustainability. Albert has prior experience in supply chain working groups and expressed a desire to contribute technically to the UNP, particularly in event modeling and supply chain analysis.
- **Meeting Governance and Volunteer Structure**: Harley Thomas clarified that the Tech Working Group operates as a volunteer-based collective without formal task assignments, relying on members to pick up issues they are passionate about. Meetings are kept to 45 minutes to respect members' time, and the group encourages open contribution from all members regardless of the scale of their input.
- **Long-Term Data Durability**: Harley Thomas introduced the problem of long-term data durability, specifically addressing scenarios where suppliers go offline while certificates remain necessary. This is a significant challenge for the UNP as it relies on volunteer protocols and faces demands for long-term record-keeping that currently lack standardized regulatory requirements.
- **Albert Verdeny's Current Technical Focus**: Albert Verdeny is currently engaged in the supply chain working group, specifically challenging the definition of "make, move, modify" events. They noted that current event definitions may be insufficient for modeling complex supply chains and are also contributing to discussions regarding mass balance and segregation in supply chain attributes.
- **Graph Validation Proposal**: Harley Thomas outlined a proposal for "Graph Validation" to handle verification rules in a human-readable format that approximates English. The goal is to allow non-technical users to define rules (e.g., verifying deforestation-free status) that can be translated into a deterministic JSON structure and subsequently into execution engines like Shackle or others, avoiding a "winner-takes-all" approach regarding technology.
- **Scope of Validation Rules**: Albert Verdeny raised questions about the scope of this validation logic, specifically whether it should include data quality checks like mass balance (e.g., ensuring output quantities do not exceed inputs). Harley

Thomas confirmed these checks are within scope and critical for the functional integrity of the system.

- **Challenges of Natural Language Rules**: A significant portion of the discussion focused on the potential ambiguity of using English for business rules. Albert Verdeny expressed concern that without formal definitions, different users might interpret the same English sentences differently, leading to inconsistent implementations. Adrienna Zsakay highlighted that in sectors like construction materials, the ambiguity of terms—such as different types of steel—necessitates high precision, supporting the need for a clear, defined vocabulary.
- **Anchor Phrases and Middle Layer Format**: Harley Thomas proposed addressing ambiguity by requiring the use of "anchor phrases" to force structure on non-technical users, ensuring rules are machine-parsable. They suggested an intermediate format, tentatively referenced as an "ACG," which would serve as a bridge between written English and target execution engines like Shackle, providing a common language that the UNP could govern.
- **Technical Implementation Trade-offs**: Albert Verdeny analyzed the risks of creating a custom middle layer, noting it introduces a new standard that requires maintenance and potential translation efforts for every target engine. They questioned whether it might be more efficient to adopt an existing formal specification, like Shackle, and use a parser to convert it to natural language for business users, rather than using natural language as the primary source of truth.
- **Feasibility of Custom Standards**: Harley Thomas defended the custom middle-layer approach by pointing to the specific, limited scope of the UNP (e.g., product passports and facility records), arguing that a bespoke solution is more manageable than attempting to cater to generic, global graph database use cases. Albert Verdeny agreed to review the draft proposal once shared and continue the research into how other industries solve the problem of interpretable constraints.

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