HSML

https://tools.ietf.org/html/draft-koster-t2trg-hsml-00

Media Types for Machine Interaction
Why HSML

- Develop the REST and hypermedia design style for machine interaction
- Build on IETF CoRE standards
- Standardized data model and interaction model for interoperability – like HTML
- Introduce new design patterns to extend REST for machine control applications
What is HSML

- Serialization
  - JSON, CBOR
- Data models
  - CoRE Link-Format, SenML => HSML Collections
- Interaction model optimized for machine workflow
  - Machine comprehensible hyperlinks and forms
  - Link embedding and transclusion
  - Separate or combined data and hypertext
- Transfer layer abstraction
  - Generalizes forms and other message based controls
  - Enables REST and Pub/Sub protocol binding
Design Patterns

• Extensions to the REST design style
• Enable machine control and asynchronous interaction using stateless client and REST
  – Hypermedia based discovery
  – RESTful actuation
  – RESTful asynchronous notification
  – Machine proxy, "device shadow" interaction
• Servient Client + Server integration
  – Consume and expose resources at the same time
• Link annotation for application semantics
CoRAL and HSML

Media Types for Machine Interaction
Klaus Hartke and Michael Koster
Comparison

• Similarities
  – Collections of links and items
  – Forms to drive resource state updates
  – Interoperable data models

• Differences
  – CoRAL uses a data model derived from HAL
  – HSML uses CoRE Link-Format and SenML
  – CoRAL uses media types to define application semantic vocabulary and data serialization
  – HSML uses link annotation to embed application semantics
Next Steps

• Create a common use case prototype to evaluate both approaches
  – Cross-domain interoperability
  – How does the difference in semantic annotation impact application design?
  – Discovery, resource construction, application interaction

• Converge to a single representation format and interaction model over time
Project

- Take CoRE Apps lighting example and translate to HSML
- Implement BB in HSML
- Implement RD as an alternate discovery to BB
- Compare HSML and CoRAL
- Compare RD and BB
  - HSML + BB
  - HSML + RD
  - CoRAL + BB