

Meeting Minutes

Meeting: September 2, 2014, web meeting of Patterns Challenge Team of MBSE Initiative, via remote dial-in.

Participants:

(**= co-chairs of challenge team)

Name		Affiliation	Email
Cook	David	Moog Aerospace	Dcook@moog.com
Kittell	Kirk	Esterline Mason	kirk.kittell@gmail.com
Peterson (**)	Troy	Booz Allen Hamilton	peterson_troy@bah.com
Pickard	Andy	Rolls-Royce	Andrew.C.Pickard@rolls-royce.com
Sanyal	Saumya	K2 Firm	sksanyal@visi.com
Schindel (**)	Bill	ICTT System Sciences	schindel@ictt.com
Spoth	Mike	Moog Aerospace	mSpoth@moog.com
Thukral	Vijay	Cientive Group	vijay.thukral@cientivegroup.com

Summary:

1. We reviewed and discussed the Stakeholder Features portion of some of the in-process S*Patterns across the sub-teams.
2. We reviewed a Domain Model portion of a pattern, in preparation for review of that (Domain Model) part of other team S*Patterns in our next call.
3. In discussing the draft pattern on verification from Andy Pickard, we discussed how it could be represented as an S*Pattern, and the motivation of some of the differences.
4. Various questions related to the portions of the patterns reviewed were raised and discussed.
5. The project schedule, rate of progress, and rate of team web meetings for the rest of 2014 were discussed.
6. Plans for related IS2015 and GLRC2014 papers were discussed.
7. Outreach to other INCOSE working groups were discussed, including plans for an IW2015 MBSE Workshop break-out session on Agile Systems, Patterns, and Composable Systems, with Rick Dove.
8. We agreed to ***meet again in two weeks, on Monday, September 15, at 4:00 PM EST.*** (However NGC subsequently reported a calendar problem.)

Details:

9. Pattern construction in active progress by four sub-teams:
 - Product (Oil Filter) and its Manufacturing System: Bill Schindel, Stephen Lewis (ICTT), David Cook (Moog), Saumya Sanyal (K2 Firm)
 - Aerospace Electronic System: Tamara Valinoto and her NGC colleagues
 - Verification System: Andy Pickard and Rolls-Royce colleagues
 - RC and Autonomous Car: Troy Peterson and BAH colleagues
10. Bill expressed willingness to help others with additional patterns they wish to try, or to join in with those four in progress above where this may be allowable. (Following up with Saumya and David on the Oil Filter Pattern.)

11. Submission (by November) of related IS2015 papers is encouraged. At least two are in the works, from the teams listed above. A related INCOSE GLRC2014 submission has also been accepted for that (October) conference.
12. Andy Pickard walked through the components of his draft Verification System pattern content:
 - Focused on five “design patterns” for the (SE) Verification Process, concerned with common problem statement about detection of errors--whether of errors in target system requirements, target system designs, or otherwise.
 - These patterns are currently represented in the prose template (not yet MBSE) form of patterns described by R.H. Barter and others, following the work of Christopher Alexander.
 - Bill briefly summarized separate feedback he had offered Andy, as to how these patterns could be expressed in S*Model form--recalling that this Challenge Team of the MBSE Initiative is focused in particular on model-based patterns, using the ‘minimal model information’ approach of the S*Metamodel.
 - Bill will follow up with Andy on interest in expressing this material in S*Pattern form.
13. Troy Peterson walked through the Stakeholder and Feature components of his draft RC/Autonomous Car pattern content:
 - Focused on “cars” that can be controlled by remote access (RC), with varying degrees of autonomy, and ranging from hobbyist (e.g., racing) to commercial (e.g., tank inspection) or military (e.g., recon) applications.
 - Discussion of the proposed Feature set as typically used in highly configurable platform / product line models as the driver of configuration of the rest of the pattern. That is, selection and population (or depopulation) of individual modeled Features from the pattern is used during the Pattern Configuration Process to generate a specific configuration (model) from an existing S*Pattern, and the pattern’s modeled interconnections can be sufficient to generate the configuration of the rest of the pattern (requirements, design, etc.).
 - The Feature Attribute portion of the model should be sufficient to describe the scoring aspects of the Trade Space for various configurations. This means that all decisions or arguments about design or other aspects would in every case reference the Feature impact to defend or rationalize the decision or argument.
 - Troy illustrated domain-specific Stakeholder, as well as Feature, content, across car application, manufacturing, and distribution domains.
 - Troy plans to include some significant diversity within the pattern, although he will drill into certain cases more than others.
 - Troy also discussed interest in representing Design for Change (DFC) aspects, possibly by reverse engineering some disparate designs, into the pattern. (Note that this is also related to the planned IW2015 MBSE Workshop break out session discussed by Bill.)
14. Bill Schindel briefly reviewed Domain Model content of the example Oil Filter S*Pattern:
 - Illustrating domain model areas we’d like to review in sub-teams’ patterns next meeting.

- Domain model includes external Actors, External Interfaces, External Input-Outputs or Domain Relationships, and definitions of same.
- We also looked at what the same Domain Model would look like in SysML notation, very similar, using Enterprise Architect.
- Related questions from group led to discussion of traceability between two complete descriptions of the same behavior at the external boundary of the system of interest:
 - i. The Stakeholder Feature Model: Should describe, in stakeholder benefit (value) terms, the behavior of the system. This should “blanket” (cover) all the behavior, but in a stakeholder issues sense, typically subjectively in at least some cases, parameterizing those values or utilities using Feature Attributes.
 - ii. The External Interactions Model: Should describe, in objective (physics-like) terms, the behavior of the very same system, at the very same external boundary, interacting with all the actors shown in the Domain Model, through all the interfaces of the Domain Model—but this time, in value-neutral terms that are testable but carry no idea of value or utility.
 - iii. There was a discussion of traceability between the two. The beginning of that traceability is the (many-to-many) Feature-Interaction association shown in the S*Metamodel.

Action Items:

15. Catch up with NGC and coordinate team meeting calendars (Troy Peterson, Tamara Valinoto)
16. Offer specific illustrations of S*Pattern form of verification patterns provided by Andy Pickard, and discuss same with him (Bill Schindel)
17. (Each pattern sub-team) Continue working on individual patterns, to stay ahead of the pattern review schedule:

Sessions	Configurable S*Pattern Construction
Aug	Configurable Features Model; Domain Model
Sep	Domain Model; Interactions; States
Oct	Detail Interactions; Requirements; Attribute Couplings
Nov	Logical Architecture; Detail Interactions; Requirements
Dec	Physical Architecture; Failure Modes
Jan	More about configuration rules

18. Use Global Meet’s audio recording feature for next meeting, adding audio record of meeting (Bill S)
19. Generate meeting minutes and distribute to attendees and interested parties. (Troy P, Bill S)
20. Support IS2015 paper(s) from project teams (All interested team members, Bill S, Troy P)
21. Report to MBSE Initiative on Challenge Team plans and status (Bill S)
22. Continue to seek liaison with other INCOSE WGs, including Energy & Power (Katie), Agile and Security (Rick, Bill), or others.

References:

23. September 2 meeting agenda and meeting slides (including Oil Filter Pattern), at http://www.omgwiki.org/MBSE/doku.php?id=mbse:patterns:patterns_challenge_team_mtg_09.02.14
24. Draft of Verification System Pattern, by Andy Pickard.
25. Draft of RC Car System Pattern, by Troy Peterson
26. Patterns Challenge Team web site (contains all the following downloadable references): <http://www.omgwiki.org/MBSE/doku.php?id=mbse:patterns:patterns> ; other references on PBSE provided there.
27. Patterns challenge team Charter (see web site)