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| **Table Number: CDR Facilitator Name: Hoelscher** | |
| **Session 1 Part 1: Implementing Digital SETRs** | |
| For SETR processes in general, please use the space below to answer the following questions. If continuing your answers on a different page, please use the question number, e.g. 1.c, to indicate what you are responding to. | |
| **Overall SETR Process**   1. What are the current overall challenges to preparing, documenting, executing, and reviewing SETRs?   Very waterfall makes the process very slow. We have to freeze the work so no one makes a mistake in front of the colonel. Time is spent on preparing for the review than on the technical work – no ability to be continuous. Just snapshots in time – not consistent, could be delayed, always working in the past.   1. What approaches (digital or otherwise) have you found successful in accelerating the SETR process while increasing (or maintaining) the efficacy of the review?   Having as many artifacts in a model-based format as possible. Requires having an environment set up in advance. Helps to have reviews to see the material before the review. Understanding requirements in advance with test cases. Incremental build-up to the review itself. Stakeholder vs system vs functional requirements should be clearly articulated.   1. What digital tools, platforms, or methods have you used in your SETR processes? Have these been sufficient? Expand on successes, failures or gaps.   Northrup Grumman’s Integrated Digital Environment works well for collaboration but needs use cases built up front. It’s not always the same for every program. We won’t ever think of everything in advance so the tools must be adaptable quicky. Faster iteration in a virtual environment works well but we need to trust the model. We need independent validation. Re-use is a benefit. ASOT and reference libraries are important. Customer contracted in story-points – this was good. Allowed for flexibility!   1. What are the lessons learned from the approaches you've tried or participated in?   Having accessibility to the ASOT in a devops environment is important. Start w/ functional stakeholder needs but apply the mission. Language matters. To align language across teams develop style guide, get the teams together to wrestle through the language   1. (optional) What specific cultural attributes need to change to successfully implement the approaches identified above? Are their risks or impediments, and how would you mitigate or overcome them?   Training. Agile vs waterfall. Collaboration across functionals. Allowing technical teams to define the “how” and allow customers to define the “what” – requires thinking about how we fund what we want and how we incentivize what we want. Be thoughtful about unintended consequences. Training at different levels – outcomes vs processes. Also consider legacy vs new start programs – they have different needs and have have different solutions. A risk averse position is today’s environment is a very high risk position to be in! Consider the incentive structure top-down. Fail fast. Consider: at AWS every program is treated like a new tech start-up, competing for attention, resources, etc. Drives a more-risk based mind-set…and drives speed. | |
| **Session 1 Part 2: Implementing Digital SETRs** | |
| For your designated SETR event, please use the space below to answer the following questions. If continuing your answers on a different page, please use the question number, e.g. 1.c, to indicate what you are responding to. | |
| **Circle your table’s designated SETR Event** | |
| 1. Systems Requirements Review (SRR)  2. Systems Functional Review (SFR)  3. Preliminary Design Review (PDR)  4. Critical Design Review (CDR) | 5. Test Readiness Review (TRR)  6. System Verification Review/Functional Configuration Audit  7. Production Readiness Review (PRR)  8. Physical Configuration Audit (PCA) |
| **Specific Digital SETR Gate Criteria (as specified by your table marker)**  For the Digital Engineering criteria proposed for your selected SETR event in the provided “Digital SETR Gate Criteria” document,   1. Do the listed digital engineering criteria make sense for your selected SETR event? 2. Are there any criteria you would add, change, or remove? (Annotate the Gate Criteria doc if helpful) 3. Do the listed criteria represent a reasonable digital maturity for the SETR event?   There’s nothing here that talks to trust in the model, which we need. Different tiers of requirements (stakeholder, functional, system) would be helpful for traceability.) Data traceability can be lost without a digital thread. We must define accessibility. We need a workflow process. We need a data model/strategy. How can we connect to the data? Data governance is important. Must define your measures of success/metrics that are quantifiable, so we are working with the right level of technical devt. We don’t want to over-engineer a solution for a program that doesn’t need it. (“don’t gold-plate it”). Consider adding a risk register – CDRs are really about assessing and allocating risk.  **CDR Example Language (with our table’s edits included):**   * Program data is continuously accessible to stakeholders through the digital engineering ecosystem, with workflow defined on how this is implemented. * The digital thread is developed in accordance with the SEMP\*. * MBE\*\* model contains the component verification methods and requirements. * MBE\*\* model includes the system’s components. * MBE\*\* model includes the functional and performance requirements of the system’s components traceable to the system requirements. * Establish/document a data strategy   \*establish your security compliant ASOT strategy so you don’t have multiple ASOTs at different security levels  \*\*MBE vs MBSE because its more than just a ‘systems engineering’ model | |

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| **Table Number: CDR Facilitator Name: Hoelscher** |
| **Session 2: Future State of Technical Reviews** |
| Under the premise that we are now in 2045 where DMM has been actualized, what would the process of technical reviews be?  1. How would you change / eliminate / redesign the technical reviews in this new world?  2. Map out the new technical reviews process to make it a reality  We would do it in a continuous way leveraging devops approaches with milestone reviews at specific events. Getting all stakeholders engaged. Adapting devops best practices is pivotal. Programmatic slides maybe, but all tech work is shown in live demos.  Example of getting all stakeholders engaged. Discussion around airworthiness/regulatory checklsits slowing down processes with a “we get to it when we get to it” attitude. Let’s separate what impacts airworthiness vs what doesn’t we aren’t getting sign-offs where it isn’t needed. De-centralize. Get an empowered airworthiness stakeholder within the program team to review and make decisions.  Role-based user-interfaces could allow for users to see views of models/data that matter to them to allow for faster reviews and decisions, with flags/highlights for changes with the highest risk factors triggered – put focus on the most important/risk areas first.  The sooner we can show data to the stakeholder, the better. Future state – those stakeholders will still be here, so we can’t “burn it down”. We need shorter iterations – more like a retrospective on a short sprint, could be asynchronous. Consider using devops tools.  Having an integration plan is really important.  CDRs exist for a reason and are – and will be necessary. We need to assess risk and we need to align stakeholders. In today’s world, we sometimes don’t look deep enough for get far enough into the analysis to know true risk factors. We really need a continuous review.  CDRs could consider multiple outcomes with an ability to pivot fast, using DevOps techniques. We many need to look at a suite of options. Could use AI to come through doctrine to find starting points for solutions.  Remember the intent of a CDR: it’s a risk review. At the end, you don’t have a perfect answer. All you have is an answer to “is the risk acceptable enough to move forward. So what we really need to do is find a way to get to that answer more quickly!  Examples of Stakeholders for the CDR: Cyber, T&E, Airworthiness, Sustainment. |
| **Additional Comments/Feedback** |
| Please provide any additional comments or suggestions on SETRs, Digital Transformation, or other areas you would like to express to the Air Force Material Command.  Please also include on feedback on the workshop, or recommendations for workshops or events you would like to participate in the future. |