Systems Engineering Questions

Holistic Focus

1. What larger system are you a part of, and what does that mean to your system?
2. What are the key interfacing and enabling systems that exchange information with your system?
3. What are the expected emergent properties (both positive and negative) of your systems?

Boundaries, I/Fs Hierarchies

1. What is your systems boundary? How will it change over time? Do you have a current system boundary diagram?
2. What are the external and internal interfaces of your system?
3. Where does your systems fit in the overall hierarchy?

Purpose → Function → Form

1. What are the system goals and objectives? Why is your system needed? What is the market for this system?
2. What does the customer need from your system? Beyond the customer, who are your other stakeholders and what are their requirements? What are the business drivers for this system?
3. What are the constraints on your system?
4. What behavior (functions) does your system need to perform? Are these functions reflected in the system requirements?
5. Does your system have a clearly defined set of technical requirements? Are they captured in a requirements database and linked with the other project requirements?
6. What is your system architecture and design? How is it used to allocate and derive the systems element requirements?
7. What modeling and simulation have you done to confirm your design?
8. What requirements are at risk of not being met?
9. Have you performed an impact analysis for any potential changes?

Life Cycle Approach

1. What are the top 2-3 life cycle considerations (i.e., the "ilities") that will drive your system's requirements and design?
2. What are the human interfaces needed by your system?
3. How is affordability, including Design to Cost (DTC) and Life Cycle Cost (LCC), addressed?

Balanced Solutions

1. What few critical technical measures will drive success for your system? How do your system elements contribute? Are you tracking them as Technical Performance Measures (TPMs)?
2. What are the key trade-offs needed for your system? What are you doing to ensure you have a balanced solution?

Managed Risks & Opportunities

1. What are the key system risks? How are they being treated?
2. What opportunities exist? How are they being realized?
3. Do you have any new or unproven technology in your system? Do you understand the risk associated with it?

Other Questions

1. What people and other resources are needed? Are you staffed for systems success? Are the Systems Engineers equipped to do their job with the proper training and tools?
2. Has the system been through an effective technical review?
3. If changes happen, how are the decisions made and communicated to the team? What baselines do you have in place now? In the future?
4. Have you planned for system integration?
5. Are you doing early verification and validation?

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Version: Mar 2017