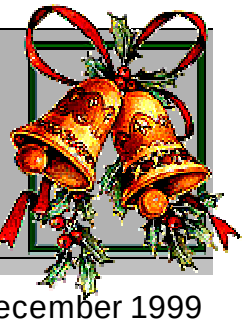
N810 Newsletter



Updates from the Requirements and Acquisition Branch and Navy JROC POC December 1999

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New Joint Staff 's Policy for Updating ORDs To Incorporate Interoperability KPP and Cost

CJCSI 3170.01A, dated 10 August 1999, requires DoD Components to address **Cost** and identify **Information Exchange Requirements** (IERs) that support the development of the **Interoperability KPP** in ORDs. In accordance with JROC Memorandum 132-99, dated 16 November 99 – unless the JROC Secretary grants exemption for a specific program the following policy is directed (text in quotation marks are taken verbatim from the JROCM):

Affordability in ORDs

"**All ORDs** supporting an upcoming Milestone I decision will address cost as outlined in Enclosure E (ORD Generation Process) of CJCSI 3170.01A. All ORDs supporting a Milestone II or III decision will address cost, however, cost may be extracted from the Acquisition Program Baseline (APB) for inclusion into the ORD."

Don't blame N810 for the language defects here—we non-concurred on this language but were outvoted. As we discussed in previous Newsletters (Sep 99), your affordability figures should be stated in terms of what you want to evaluate (Total Ownership, Initial Procurement, RD&E, Operation and Maintenance, etc.). At all times the cost addressed in the ORD must match the APB. If you are revising the ORD to comply with this policy, to make things easier for you and to obviate the need for new cost studies, you may extract the corresponding cost figures from the APB that is in effect at the time of the revision. But if you are approaching a new Milestone, a new APB will have to be drafted. Therefore, you must ensure that the costs addressed in both documents are equivalent.

Information Exchange Requirements (IERs) And The Interoperability KPP

"**ORDs supporting Milestone I. All ORDs** supporting an upcoming Milestone I decision will comply with CJCSI 3170.01A. The ORD will identify the IERs and Interoperability KPP prior to JROC or DoD component review, validation and approval."

This means that every ORD being submitted for its first milestone must include the IERs and an Interoperability KPP starting with the initial O6-Level review. We tried to get a grandfather clause written into this requirement, but lost.

"**ORDs supporting an upcoming Milestone II or III before 1 April 2000** will update their ORD to include an Interoperability KPP. Identification of IERs is not mandatory. If the JROC delegated ORD approval authority to the DoD component and the **only** KPP change to the ORD is the addition of an Interoperability KPP, the formal JROC O-6/Flag review process is not required. The DoD component will be required to brief their Interoperability KPP through the JROC briefing process. CINCs and Services will be given seven working days to review the briefing slides that will be presented to the JROC. The ORD validation JROCM will list the validated interoperability KPP. The JROCM then becomes the document of record that feeds the interoperability KPP into the acquisition process." – This language applies only to ACAT I and JROC Special interest programs for which approval authority has been delegated to the CNO. Non-ACAT I programs will not be required to identify IERs, but the Interoperability KPP must be included.

"**ORDs supporting a Milestone II or III between 1 April 2000 THRU 28 February 2001** will update their ORD to comply with CJCSI 3170.01A prior to the next Milestone. If the JROC delegated ORD approval authority to the DoD component and the **only** KPP change to the ORD is the addition of an Interoperability KPP, the formal JROC O-6/Flag review process is not required. The DoD component will be required to brief their Interoperability KPP through the JROC briefing process. CINCs and Services will be given seven working days to review the briefing slides that will be presented to the JROC." This means that if you will have a milestone between 1 April 2000 and 28 Feb 2001, you will need to update your ORD to support that milestone.

"**ORDs supporting a Milestone II or III after 1 March 2001** will update their ORDs prior to 1 March 2001 to comply with CJCSI 3170.01A. The rationale for updating the ORD early is to ensure that potential Interoperability issues are addressed early vice waiting until just prior to the Milestone decision. Some programs may require updating prior to 1 March 2001 due to unique program circumstances and will be handled case by case through the JROC Secretary." This requirement ensures that all ORDs will be updated by 1 March 2001, even if the next milestone doesn't occur until after that date.

NOTE: "All ORDs regardless of ACAT level are still required to complete an Interoperability Certification (from J6) prior to any milestone review IAW CJCSI 3170.01A and CJCSI 6212.01. "

Requirements Generation Throughout History

The next time you see a Space Shuttle sitting on the launch pad, take a look at the two big booster rockets attached to the sides of the orbiter. These are the solid rocket boosters, or SRBs. The SRBs are made by Thiokol at a factory in Utah.

The engineers who designed the SRBs wanted to make them a bit fatter, but the SRBs had to be shipped by train from the

factory to the launch site by rail. (This would have constituted a "ship by train" KPP, driven by the CONOPs.) The railroad line to the factory runs through a tunnel in the mountains. The SRBs had to fit through that tunnel. The tunnel, not surprisingly, is slightly wider than a railroad track.

The US Standard railroad gauge (distance between the rails) is 4 feet, 8.5 inches. That's an exceedingly odd number. Why was that gauge used? Because that's the way they built them in England, and the US railroads were built by English expatriates. Why did the English people build them like that? Because the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used. Why did the tramway-builders use that gauge? Because the people who built the tramways used the same jigs and tools that they used for building wagons, so tramway wheels were spaced the same as wagon wheels.

Why did the wagons use that odd wheel spacing? Well, wagon-builders tried to use other wheel spacing, but the wagon axles kept breaking on some of the old, long distance roads, when the spacing of new wagon wheels didn't match spacing of the old wheel ruts.

So who built these old rutted roads? The first long distance roads in Europe were built by Imperial Rome for the benefit of their legions. The roads have been used ever since.

And the ruts? The initial ruts, which everyone else had to match for fear of destroying their wagons, were first made by Roman war chariots. Since the chariots were made for or by Imperial Rome they were all alike in the matter of wheel spacing.

Thus, we have the answer to the original question. The United States standard railroad gauge of 4 feet, 8.5 inches derives from the original specification for an Imperial Roman army war chariot. The wheels on a chariot were spaced so that two horses could run side by side pulling the chariot. S**o a major design attribute of the space shuttle, arguably the world's most advanced transportation mechanism, was determined by the width of two horses' behinds.**

Specs and bureaucracies live forever. So the next time you are handed a specification or a requirement threshold, and you wonder which horse's behind came up with it, you may be exactly right. Don't be afraid to challenge the foundation of requirements. If the requirement is well written, it'll survive your scrutiny. If not, you've done us all a favor by challenging it.

Answers To Questions Submitted By Readers

Q: My program was just revalidated for milestone II prior to the approval of the new CJCSI 3170.1A. We expect that the next milestone will not occur prior to 20 months from now (May 2001 or later). Why would I have to update the ORD before March 2001? Would I have to review the ORD AGAIN prior to the milestone?

A: As mentioned above, the reason for updating the ORD early is to ensure that potential Interoperability issues are addressed early vice waiting until just prior to the milestone decision. If your milestone decision occurs within a "reasonable time" after this revalidation of the ORD, **and** there are NO "significant changes" that would affect the program, the document might NOT have to be revalidated. But that's the Joint Staff's call, not ours.

We must consider and apply common sense when defining what a "reasonable time" and "significant changes" are, as they apply to your particular program.

Contact N810 with your questions, suggestions, or comments at

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HAPPY HOLIDAYS