

C/AFT ATS DL FG Telcon  
Thursday, July 2, 1998 - 11:00 am PDT

Attendees:

Russ Chew, American  
Dennis Lee, FedEx  
Sarah MacLellan,  
Norm Fujisaki, FAA  
Dave Norr, FAA  
Greg Anderson, FAA  
E. J. Spear, MITRE  
Joe Sinnott, MITRE  
Jim Simpkins, MITRE  
Pete Kostiuk, LMI  
Monica Alcabin, Boeing  
Bob Schwab, Boeing

Discussion began with the goal of this telcon — to review the C/AFT Benefits Analysis package that was sent to all members of the DL FG and make recommendations/changes, etc. Hopefully this transitions package will be able to be used as a template by the other focus groups for their analysis.

In the C/AFT Process, Context is not Ops Concept. Also, this group is not charged with human factors or technology assessment. Discussion then continued with the ground rules that will be used for conducting the analysis. The first one is that ADS-B and ADS-A DL functions will be considered as communications functions. In going through this, it was felt that the applied part of these technologies are indeed part of the communications group. Discussion then continued on how do we assign the cost when two technologies are inseparable? One suggestion was that if they are inseparable, we allocate the benefit in proportion to the cost to the technologies that are inseparable. The FAA prefers to assign marginal investment to marginal benefit, otherwise, we may not see the benefit. The suggestion was made that we keep inseparable investments together.

The structure for the analysis will be the levels of service. Cost/benefit analysis will only be done for the first level of service. Rather than having the communication services of ADS-B be considered separately under that FG, there are several options: we can that application with us in the DL FG, separate the communication piece of ADS-B, or not take that application with us. Subsequent levels of service that include other enablers, will be done statistically with ranges of benefit. Every enabler that gives another kind of benefit will have to be included in DL study or it will not be included at all. The idea of proportioning the cost was that we could treat enablers separately. If we treat them as being inseparable, we cannot have any overlap between the benefit studies of the different groups. The downstream enablers will be marginal benefit. The FAA considers ADS-B as one of those future marginal benefits.

One comment made was that, if we have to include all the inseparable enablers when we undertake a study, the study gets so large, that we never get to complete it. The study needs to be bounded. It will be difficult to do a cost/benefit study beyond level one. The FAA noted that NECCOM will definitely be able to do DL communication downstream. The marginal investment of routers for DL will yield a large benefit for DL. The modest investment to achieve ADS-B downstream will realize a marginal benefit from ADS-B.

The question was raised whether we want to include ADS-B applications as a level of service. It was agreed that the first step of the cost/benefit analysis will involve a lot more data than subsequent steps. Subsequent steps will need more statistical data. Suggested wording on the bullet on p. 3 was “Detailed economic analyses will be done on a marginal basis. We need backdrop that provides long term structure for the business case.”

It was suggested that “intervention rate” be changed to “prevention” on the separation rings model to more clearly define the ring. In going through the En Route Capacity Transition charts, communication and surveillance, and navigation are enablers to reduce the intervention rate buffer. How much of the benefit do we assign to navigation, or do we get into another level of service and introduce navigation there? Or, do we treat them as inseparable?

The discussion continued with an explanation of the separation rings. The 5 nmi is a theoretical value. The effective separation, though, is bigger. The question is, when does the controller step in and, if the resources are constrained, when does the controller step in? There may be further slowdowns because of resources. No controller allows the separations to get to 5 nmi. At some point the controller takes an action.

In the En Route Capacity Transition chart, we don’t need an airspace level improvement to get the benefits in the first level. The airspace can be designed to get more routes based on RNAV. When we do the analysis, we would only recognize the benefit from DL. If we assume that the two are inseparable, we would have to assume that we have to buy an RNAV set for the airplane. The airlines tend to link cost/benefit analysis to equipage requirements. However, from a system level perspective, the FAA will want to lump them all together. The FAA treats the navigation function or, for that matter, anything that has been purchased for another purpose, as a sunk cost. It represents that last marginal investment that needs to be made to realize the new benefit from ADS-B.

The discussion then continued on equipage. If the aircraft isn’t equipped with RNAV, you won’t get credit for the benefits. It is envisioned that the C/AFT analysis will be performed to help the airlines with equipage issues. As we discuss subsequent analysis, we may find that the first level of service may or may not pay for itself. But, if it is close, the business case is what will drive you to make the equipage case anyway.  
Bob - but aircraft are not WAAS equipped

In developing the ground rules for the cost/benefit analysis, it was agreed that those enablers that may provide benefit but that are inseparable, we will not consider in the analysis because we cannot proportion the cost. We will not consider the linked elements, especially if they are downstream, like ADS-B.

Norm Fujisaki agreed to share the Transitions package with the FAA integrated requirements team to reduce separations (Mike Serillo or Steve Bradford).

We just started including ADS-B as part of the communication enablers. We may be able to reduce the separation standard by transferring responsibility or having more confidence in the target resolution.

Discussion continued around the phrase “separation standard.” It was suggested that it be changed to “reduced separation requirement.”

In performing the analysis, when we don’t have any data, we will use probabilistic analysis. We will have to define preferential access and we will have to develop the rules for modeling the benefits. Will we assume some preferential benefit to those that equip or will it be a step function? It may not be so critical from an FAA perspective, but it will be a critical step for developing the transitions. If we cannot define it, we will have to make some assumptions and that will be considered a risk.

The next step is for the group to provide specific comments and also define specific studies. We are especially looking for inputs to specific benefits. We want this to be the generic model that we use for all the focus groups. Comments on the Transitions package should be sent to Monica Alcabin at (monica.s.alcabin@boeing.com) while Kathleen is on vacation.

Norm Fujisaki requested that the group assemble a bibliography of DL studies and post it on the website.

Comments on the Transitions package are due to Monica by July 10.