

Conceptual Roadmap and Performance Ambition

1. We call it a Conceptual Roadmap - its really more a contextual roadmap. It is really expectations for increasing performance as the scope of digitization and information integration/cooperation grow.
2. It was purposely not a concept of operations, it does not have specifics on roles and responsibility for evolutions among the ATM actors although it implies changes in their techniques and integration, and it is not an explicit concept of use although it makes assumptions about how enablers may change. Those aspects are really to be addressed in the ASBU threads and elements.
3. It was developed because there was a concern that the threads and elements may not be tied together at the strategic level. Recall that the Blocks are indexed by time with 6 year. With each major and minor update of the GANP, the status of each enabler to an ASBU element was reviewed. The accomplishment of the enabler is often tied to an ICAO document and related action and there is often a time shift . If the enabler moved to the right and fell outside of the current block duration, the element is shifted to the next block with a new reference number. Elements were seemingly floating out in time through the individual blocks.
4. Why was this occurring and why did the air navigation conference feel this disconnection? Well that is because the blocks are linked to time ranges. The first GANP optimistically described concept increments for each thread and for each of the blocks of time and forecast the completion of elements in that block of time to achieve those conceptual increments either through an operational change or an enabler improvement. But as we constantly find out in aviation, the effort to achieve is often underestimated and the elements are achieved or forecast to be achieved a later time. This also means that the forecast concept improvement increments are no longer indicative of change in that time frame.
5. So how to reconnect the increments and associated elements without relying on a direct link to time. The conceptual roadmap was developed to do this and has as its first principles that expanding the scope of information, expanding the sources of the information, and expanding the reach of the information and adjusting the user roles the Air Navigation System make the System more efficient both in offering capacity and in the use the capacity.
6. The Conceptual roadmap establishes this in 4 information and actor environments.
 - a. STEP 1: FLIGHT OPERATIONS IN A DIGITALLY RICH ENVIRONMENT
 - i. Increase the quality of individual decisions by replacing rules-of-thumb by measured data.

- b. STEP 2: TIME-BASED OPERATIONS ENABLED BY AN INFORMATION REVOLUTION
 - i. Integrate your individual time-based decisions
 - c. STEP 3: TRAJECTORY-BASED OPERATIONS ENABLED BY FULL CONNECTIVITY THROUGH THE INTERNET OF AVIATION
 - i. Expand your data set and the coordination of decisions regionally
 - d. STEP 4: TOTAL PERFORMANCE MANAGEMENT SYSTEM FOCUSED ON BUSINESS/MISSION NEEDS
 - i. Common data across all actors and more shared decision making.
7. Those are really short hand s for what the conceptual roadmap describes without getting into too much detail. Now how should it be used?
- a. For ASBU writers and maintainers by doing the mapping to the four levels there is a link to the information/digital environment which they support and are dependent on. While the elements time block assignment may shift as the element matures to being available, the environment will not change.
 - b. For the GANP SG we can measure the progress towards that conceptual level's characteristics by comparing the completion of the individual elements and their current assigned block.
 - c. For the ASBU users, the GANP does not provide the full context of implementation and for some enablers stops at either technical standards or performance requirements. So, decide which level best describes what you would like the operational environment to be. Then it is important to look at the assumptions about your networks layer and connections with your regional partners etc. to see when your backbone infrastructure and applications are in place to support integrated elements you have chosen as your implementation goal and then the associated elements in the individual threads. This helps you filter the ASBUs for your plans.
 - d. Remember, the GANP ASBUs will identify dependencies between elements but not the bedrock upon which they are implemented.