





CONCEPT OF INTEGRATION (CONINT)

WHAT IS A CONINT?

- Potential standard System Engineering (SE) artifact
- Based on Concept of Operations (CONOPS)
- Modeled after the "Draft FAA Concept of Operations Guidance" and Template"
- Made up of the following core sections
- Introduction and Scope
- Current Capabilities
- Concept Methodology, Description and Justification of Changes
- Concept of Weather Integration
- Summary of Impacts

WHY IS A CONINT IMPORTANT?

- No current SE document addresses ATM-Weather Integration
- Enabling mechanism for ATM-Weather Integration
- Provides a globally-accepted method
- Describes use of weather information in detail sufficient to allow feedback from operational experts
- Allows creation of systems and processes which remain functional in the face of weather constraints
- Retains SE rigor
- Can be signed off by FAA Program and integrated into CONOPS
- Applicable to both existing and future systems and processes

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MAKING AIR TRAFFIC MANAGEMENT-WEATHER INTEGRATION A REALITY: A CONCEPT OF INTEGRATION OF WEATHER INTO TIME-BASED FLOW MANAGEMENT

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AIR TRAFFIC MANAGEMENT (ATM)-WEATHER INTEGRATION

WHAT IS ATM-WEATHER INTEGRATION? LEVELS OF WEATHER INTEGRATION Weather Integration means that Level Zero – No integration meteorological information is included in the State of the Atmosphere State of the NAS logic of a decision process or decision tool ATM Community & Components such that the impact of the weather is Behaviors Thresholds automatically calculated and taken into _evel One – "on the glass" ircraft Limits account when the decision is made or recommended. By minimizing the need for Data Collectio humans to manually gauge weather Level Two – Translation ecific NAS constraints and determine the most actical TFM appropriate mitigation of those constraints, Level Three – Impact Weather Integration enables the best ATM solutions to be consistently identified and Level Four – DST executed. **CONINT** OF WEATHER INTO TIME-BASED FLOW MANAGEMENT (TBFM) **Key Features** Phased approach allows integration into both existing and future TBFM schedules New capabilities associated with individual phases correspond to Levels of Weather Integration Phase 1 (Level 1) previously included in TBFM CONOPS Skipped Level 2 solution and proceeded straight to Level 3 solution due to perceived small incremental co Phases 2 (Level 3) and 3 (Level 4) cover convective activity impacting airspace inside the TBFM freeze horizon Concepts similar to those proposed in Phases 2 and 3 being tested as part of the Task N work being conducted at the Florida NextGen Test Bed PHASE 2 (LEVEL 3) PHASE 1 (LEVEL 1) **TBFM Weather Integration Phase 1 TBFM Weather Integration Phase 2** (Level 1 – Weather on the Glass) (Level 3 – Impact Indicators) Description CIWS imagery overlay on TBFM PGUI Description Individual flight and flow impact on TBFM Schedule TGUI, flight lists and 7 Spring 2013 data bločks via **Benefits** "stoplight" indicators Increased situation awareness **Proposed Schedule** Description Better understanding of Mid-term (2015-2018) Decision Support System geospatial relationship Benefits **Proposed Schedule** between incoming traffic Automatic impact calculation and forecast Far-term (2019+) thunderstorms Shortfalls **Benefits** -KEJA633 Shortfalls Manual solution development Notional illustration of TBFM PGUI with CIWS imagery overla Automated optimized solution Manual impact calculation ey: 🗾 no impact 📃 possible impact 📕 probable impa recommendations otional illustration of TBFM TG Manual solution development with "stoplight" impact indicators **NEXT STEPS** Transition from current Coordination Draft status Sign off by FAA TBFM Program Office Integration of key concepts into TBFM CONOPS Creation of associated Functional Analysis (Coordination Draft delivered to FAA late November, 2011) Creation of associated Functional Requirements document (Coordination Draft to be delivered to FAA this week) Creation of Initial Weather Performance Requirements and Weather Shortfalls documents Cognitive Walk Through of TBFM with Integrated Weather with subject matter experts (SMEs)

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Preprint online: http://ams.confex.com/data/handout/ams/92Annual/Paper_201732_handout_481_0.pdf



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