CHANGE ISSUE – RTCA/DO-???

ASA MASPS REV A

Tracking Information (committee secretary only)	
Change Issue Number	5
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Short Title for Change Issue:	Application names and acronyms

MASPS Document Reference:		Originator Information:	
Entire document (y/n)	Y	Name	Michael Petri
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Table/Figure number(s)		Other	

Proposed Rationale for Consideration (originator should check all that apply):	
	Item needed to support of near-term MASPS/MOPS development
	DO-260/ED-102 1090 MHz Link MOPS Rev A
	ADS-B MASPS
	TIS-B MASPS
	UAT MOPS
	Item needed to support applications that have well defined concept of operation
	Has complete application description
	Has initial validation via operational test/evaluation
	Has supporting analysis, if candidate stressing application
X	Item needed for harmonization with international requirements
	Item identified during recent ADS-B development activities and operational evaluations
	MASPS clarifications and correction item
	Validation/modification of questioned MASPS requirement item
	Military use provision item
	New requirement item (must be associated with traffic surveillance to support ASAS)

Nature of Issue:	X	Editorial	X	Clarity		Performance		Functional

Issue Description:

RTCA SC-186 and Eurocae WG51 will coordinate for the first revision to the ASA MASPS document. They intend to unify the application descriptions and names. An ad-hoc committee suggested a new naming convention for use in this joint document, but the naming and acronym convention is inconsistent and confusing., and the acronyms are long. Michael Petri took an action item to suggest alternative names and acronyms.

Originator's proposed resolution:

Suggested Changes to the Application Acronyms for Use in the ASA MASPS Document

October 16, 2002

Michael Petri

FAA William J. Hughes Technical Center – ACB-420

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Originator's proposed resolution **(*continued*)**:

Overview: This document suggests specific changes to acronym and application titles for use in the ASA MASPS document being prepared by SC-186 WG4 and Eurocae WG51. The four application categories have all been renamed for clarity and brevity. Three application acronyms have been changed for clarity and to capture the whole of the application title. Two application names have been changed to more fully describe the application.

The new application categories describe the use of the application:

I – information Applications that use additional information to augment current tasks.

T – task Applications that add new tasks, but without changing responsibilities.

D – designated Applications that transfer separation responsibility on designated aircraft.

A – autonomous Applications that allow autonomous separation on all aircraft.

The following table summarizes all the suggested changes and their affects on the twelve applications being investigated for the ASA MASPS. (Some applications may be in the wrong application category due to redefinition of the categories.)

Acronym names for all ASA applications.

AD-HOC proposed ACRONYM	NEW suggested ACRONYM	Application Title
ATSA-SURF	AI-SATR*	Enhanced Traffic Situational Awareness during Taxi and Runway Operations**
ATSA-AIRB	AI-SAF*	Enhanced Situational Awareness during Flight Operations
ATSA-S&A	AI-SASA or AI-SAVF*	Enhanced Situational Awareness during [See & Avoid] or [Visual Flight] Operations**
ATSA-SVA	AI-SVA	Enhanced Successive Visual Approaches
ASPA-ITP	AT-ITP	In-trail Procedure in Oceanic Airspace
ASPA-S&M	AT-S&M	Enhanced Sequencing and Merging Operations
ASPA-ASIA	AT-ASIA	Approach Spacing for Instrument Approaches
ASPA-C&P	AT-C&P	Enhanced Crossing and Passing Operations
ASEP-ITP	AD-ITP	In-trail Procedure in Oceanic Airspace (Probe application)
ASEP-CEFR	AD-CEFR	CDTI Enhanced Flight Rules
ASEP-CSPA	AD-CSPA	Independent Closely Spaced Parallel Approaches (Probe application)
AAUT-ACM	AA-ACM	Airborne Conflict Management

*new application acronym **new application name

The remainder of the text describes specific problems with the ad-hoc committee proposal presented at the September joint plenary meeting of SC-186 and WG51. Explanation of the suggested changes for these problematic titles and acronyms is included. While some of these suggestions may also prove to fail at correcting these problems, they may be used as a starting point for better solutions.

Originator's proposed resolution **(*continued*)**:

Background: An ad-hoc group of members of SC-186 and WG51 proposed changing the full names and acronyms of the proposed operational applications to be included in the ASA MASPS document. The intent of this proposal was, I believe, to make the names more properly descriptive of the application, unify the names of the applications used on and both sides of the Atlantic, and to come up with a logical naming convention for current and future applications. The new naming proposal was presented to the WG51 / SC-186 Joint Plenary session in Brussels on September 23-24 as such:

- The full name of an application should convey the idea of the operational purpose of the application
- Acronym for an application:
    - ATSA-, ASPA-, ASEP-, AAUT- corresponding to the PO-ASAS categories (The leading "A" indicating that it is an airborne application.)
    - 3 or 4 characters helping the reader to correlate the acronym and the operational application.

It was also noted that the new acronyms had been chosen, in part, to make them unique.

While the intent of the proposal was good, the proposal does not use a consistent convention. Some of the acronyms and revised application names are likely to result in considerable confusion. Specifically:

- Some applications do not fit into the four PO-ASAS categories
- Some application names still do not clearly convey the idea of the operational purpose, or differentiate that application from similar applications.
- Some of the application acronyms have no relationship to the application name or description.
- The choice of acronyms is inconsistent and likely to cause considerable confusion to readers as they try to determine the expansion of the acronym.

Another problem with the proposed acronyms is that they are long and hard to remember. The suggested acronyms are about 25% (two characters) shorter. It may be useful to determine when the full acronym name, including the application category, must be used, or if the application category could be eliminated for brevity. As noted above, all application names include an "A" for at the beginning. This could also be removed.

NEW SUGGESTIONS:

I have maintained the general concept suggested by the ad-hoc committee of splitting the acronym into three parts:

1. the application operator (ATC or Flight Crew)
2. the application category (similar to the current PO-ASAS categories)
3. 3 or 4 characters helping the reader to correlate the acronym and the operational application

1 - The Application Operator (ATC system or Flight Crew)

The first character of the application category, as used in the PO-ASAS document, specified whether an application is a ground (G) or airborne (A) application. The addition of this leading A to any of the applications in the ASA MASPS could be implied, since Airborne is the first word of the title of the MASPS. I realize that ground applications are being pursued, and some other documents may include both air and ground applications. So, I can understand including this character in the application title for reasons other than the ASA MASPS use.

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Originator's proposed resolution **(*continued*)**:

Unfortunately, "airborne" doesn't really make much sense when you have an "airborne" surface application, such as Enhanced Traffic Situational Awareness on the Airport Surface. It's actually, like all the other ASA application, an aircraft-based application. PO-ASAS uses "airborne" to describe all four categories of applications, including aircraft-based airport surface applications.

The terms "ground" and "airborne" are problematic because they are intended to refer to the physical placement of the persons or equipment associated with the application. These terms can be confused with the coverage area, and, worse yet, do not account for the fact that airplanes are not always airborne. As such, I suggest that Ground and Airborne be replaced with terms more properly descriptive of the usage of the application:

- Airplane-based (A) could be used for those "airborne" applications used by flight crews.
- Ground-system (G) could be used for those "ground" applications used by controllers.

This suggestion maintains the "A" and "G" proposed by the ad-hoc group, but updates their specific meanings to more accurately reflect the placement of the application.

2 - The Application Category (similar to the current PO-ASAS categories)

The ad-hoc committee recommended using three letters (discounting the leading A) to describe the application category. These were based on the four PO-ASAS categories:

TSA for Traffic Situational Awareness applications

SPA for Spacing applications

SEP for Separation applications

AUT for Self-separation applications

These acronyms are illogical. The first (TSA) is an acronym from the first letters of each word in the category name. The second and third are the first few letters of the category name, and the fourth is apparently the first few letters of Autonomous, which isn't included in either the PO-ASAS category name or description. It is very common for readers to confuse the expansions of the acronyms, and I would venture that their chances are getting these correct, as a group, are nil.

The four PO-ASAS category names do not capture the definitions of the categories well. For example, there are not clear differences between the meanings of the words "spacing" and "separation", and between "separation" and "self-separation." These differences are made more clear in the textual descriptions of the categories, and could be reflected in the category acronym. However, the four categories defined in PO-ASAS are largely defined by; the person performing the separation task, and the person responsible for maintaining the separation, if the application applies to one designated or all aircraft, and if current standards are changed or unchanged. At least one application, Enhanced Crossing & Passing Operations, does not seem to fit into any of the categories. (The goal is not to achieve a specific spacing, as in other applications, but to maintain a minimum separation, yet the responsibility to maintain the separation stays with the controller.)

What is the reason for dividing the applications into categories at all? I suspect that the main concern is to group the applications by how complex their introduction into the airspace might be. As such, I suggest altering the categories to define their impact.

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Originator's proposed resolution **(*continued*)**:

Suggestions:

- The Traffic Situational Awareness applications generally do not involve any change in procedures or separation responsibility. Instead, they take advantage of the addition of CDTI information to enhance current procedures. As such, I suggest calling these Information applications. (I)
- Spacing applications generally involve new procedures or tasks, but the separation responsibilities are unchanged. As such, I suggest calling these Task applications. (T)
- Separation applications transfer separation responsibility to the flight crew, but only against designated aircraft. I suggest changing this category to Designated Separation applications (D)
- Self-separation applications transfer responsibility for separation against ALL other aircraft to the flightcrew. Full Autonomous Separation applications would be a better name. (A)

The single character acronyms suggested here would eliminate approximately 25% of the total acronym length as proposed by the ad-hoc committee.

3 - Individual Application Acronyms

Several of the acronyms suggested for specific applications are problematic. SURF and AIRB are acronyms for Enhanced Traffic Situational Awareness on the airport surface or during flight operations. "AIRB" and "flight operations" hold no similarity. It's a poor acronym for the application name. As previously noted, how can we have a "SURF" application that is Airborne? But, that aside, the fact is that the SURF and AIRB applications describe the location of the usage of the Traffic Situational Awareness applications, not the applications themselves. That is, they modify the application category (ATSA) rather than describing the particular application. (And I've already suggested changing that category to be called Information.)

One would guess from these two names that these two applications completely cover Traffic Situational Awareness. After all, what's left after airborne and surface applications? Yet the See & Avoid and Enhanced Successive Visual Approaches applications are also categorized as Airborne Traffic Situational Awareness applications, and are conducted while airborne, as is ATSA-AIRB.

From my (no doubt incomplete) understanding the applications, it appears that ATSA-AIRB and ATSA-S&A are essentially the same applications, with S&A aimed at the General Aviation market and limited to closer ranges to assist only in visual acquisition. As such, it would seem more sensible to use either a similar application name, or perhaps something to indicate the difference between the two applications.

Suggestions:

- Situation Awareness during Taxi and Runway operations (SATR) to replace SURF in Enhanced Traffic and Situational Awareness on the Airport Surface. I also suggest changing the name of the application to Enhanced Situational Awareness during Taxi and Runway Operations.
- Situational Awareness during Flight operations (SAF) to replace AIRB in Enhanced Situational Awareness during Flight Operations.
- Either Situational Awareness during See & Avoid operations (SASA) or Situational Awareness during Visual Flight operations (SAVF) to replace S&A in Enhanced Visual Acquisition for See and Avoid. I also suggest changing the name of the application to Enhanced Situational Awareness during [See & Avoid] or [Visual Flight] Operations. The second suggestion indicates the similarity between this and the previous application.

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Originator's proposed resolution **(*continued*)**:

Summary of Suggested Changes

GENERAL

- Change meaning (and usage of) first character of acronyms and PO-ASAS categories to properly reflect the usage of the application (Aircraft-based or Ground-based)
- Alter application categories from the PO-ASAS categories to properly capture the reason for defining four categories, and to ensure that the category definitions are appropriate for the applications.
- Alter application names to more clearly convey the operational purpose, as well as to associate or differentiate them from similar applications.
- Alter acronyms to clearly relate to the application names.
- In acronyms, consistently use upper case letters for first characters of category and application names. If abbreviated words are used, use lowercase letters for the remainder of the characters in the abbreviation.

SPECIFIC SUGGESTED CHANGES TO:

PO-ASAS categories (the first four characters of the ad-hoc acronyms):

- **Aircraft-based Information applications (AI – formerly ATSA)**: These applications are aimed at using CDTI information to enhance the flight crews' knowledge of the surrounding traffic situation both in the air and/or on the airport surface, and thus improving the flight crew's decision process for the safe and efficient management of their flight. No changes in separation tasks or responsibility are required for these applications.
- **Aircraft-based Task applications (AT - formerly ASPA):** These applications require flight crews to achieve and maintain a given interval (spacing) with, or maintain a minimum separation from, designated aircraft, as specified in a new ATC instruction. Although the flight crews are given new tasks, separation provision is still the controller's responsibility and applicable separation minima are unchanged. (While there could be some confusion with AT being mistaken for Air Traffic Control, the reader would immediately realize that any Air Traffic Control application would have "G" in front of it.)
- **Aircraft-based Designated Separation applications (AD - formerly ASEP):** In these applications, the controller delegates separation responsibility and transfers the corresponding separation tasks to the flight crew, who ensures that the applicable airborne separation minima are met. The separation responsibility delegated to the flight crew is limited to designated aircraft, specified by a new clearance, and is limited in time, space, and scope. Except in these specific circumstances, separation provision is still the controller's responsibility. These applications will require the definition of airborne separation standards.
- **Aircraft-based Full Autonomous Separation applications (AA – formerly AAUT):** These applications require flight crews to separate their flight from all surrounding traffic, in accordance with the applicable airborne separation minima and rules of flight.

Some additional changes to the definitions may be required to encompass all applications.

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Originator's proposed resolution **(*continued*)**:

Specific Application names and acronyms:

- **SATR: Enhanced Traffic and Situational Awareness during Taxi and Runway Operations** (formerly SURF - Enhanced Traffic and Situational Awareness on the Airport Surface.)
- **SAF: Enhanced Situational Awareness during Flight Operations** (formerly AIRB – application name is the same)
- **SASA : Enhanced Situational Awareness during See & Avoid Operations or**
- **SAVF: Situational Awareness during Visual Flight operations** (formerly S&A - Enhanced Visual Acquisition for See and Avoid.

Working Group 4 Deliberations:

April 22, 2003: This Issue Paper was reviewed and discussed y WG4 at the WG4 meetings held April 22 & 23, 2003 at RTCA, Inc. WG4 agreed that the applications categories as defined my Mike will appear in Section 1 of the ASA MASPS. The application names will not be used in the initial version of ASA. Since there was no feedback received from EUROCAE and the European representatives of the ad hoc group which met in September of 2002, Gene Wong took an Action Item to email Eric Hoffman and Francis Cassaux to again ask for any thoughts or comments they might have on the proposals documented in this Issue Paper. It was agreed to DEFER this Issue Paper for the next revision of ASA which is planned to be a joint RTCA/EUROCAE document.