

# ISSUE DOCUMENTATION – RTCA SC-186



Tracking Information (committee secretary only)	
Change Issue Number	9
Submission Date	4/23/03
Status (open/closed/deferred)	OPEN
Last Action Date	4/23/03

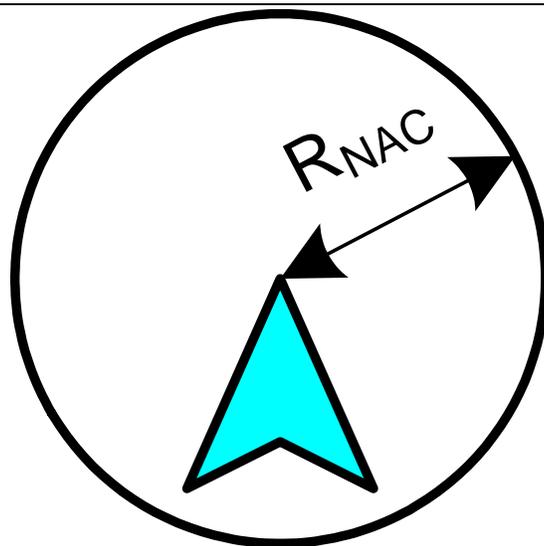
Short Title for Change Issue:	Display of position uncertainty, $R_{NAC}$
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Topic:	<input type="checkbox"/> ASA	<input type="checkbox"/> High-level	<input checked="" type="checkbox"/> X	<input type="checkbox"/> ASAS	<input type="checkbox"/> STP	<input checked="" type="checkbox"/> X	<input type="checkbox"/> ASSAP	<input checked="" type="checkbox"/> X	<input type="checkbox"/> CDTI
Document Reference:	DO-289				Originator Information:				
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Table/Figure number(s)					Other	<a href="mailto:Jhm1jhm@attglobal.net">Jhm1jhm@attglobal.net</a>			

Proposed Rationale for Consideration (originator should check all that apply):	
<input type="checkbox"/>	Item needed to coordinate with other documents
<input type="checkbox"/>	ASA MASPS
<input type="checkbox"/>	1090 MHz Link MOPS
<input type="checkbox"/>	UAT Link MOPS
<input type="checkbox"/>	TIS-B MASPS
<input type="checkbox"/>	Previously written CDTI MOPS
<input type="checkbox"/>	Other (include document title):
<input type="checkbox"/>	Item needed for harmonization with international requirements
<input checked="" type="checkbox"/> X	Item identified during recent ADS-B development activities and operational evaluations
<input type="checkbox"/>	MOPS clarifications and correction item
<input type="checkbox"/>	Validation/modification of questioned MOPS requirement item
<input type="checkbox"/>	Military use provision item
<input checked="" type="checkbox"/> X	New requirement item

Nature of Issue:	<input type="checkbox"/> Editorial	<input type="checkbox"/> Clarity	<input type="checkbox"/> Performance	<input type="checkbox"/> Functional
Issue Description (attach additional sheets if necessary):				
<p>It has been proposed to <i>require</i> that all traffic targets for which the <math>NAC_P</math> code is too small (e.g., <math>NAC_P &lt; 5</math>, EPU or HFOM <math>\geq 1</math> NM) <i>must</i> be removed from the CDTI display.</p> <p>I would like to relax this proposed requirement, so as to permit an alternative, as described below.</p>				

Originator's proposed resolution if any (attach additional sheets if necessary):
<p>For traffic targets with non-zero <math>NAC_P</math> codes, permit the CDTI display to show the target's position uncertainty. One way to do this might be to draw a circle with radius <math>R_{NAC}</math> around the target, where <math>R_{NAC}</math> is the least upper bound on the EPU value for the <math>NAC_P</math> being reported by that target. <u>Figure 1</u> shows how this might be done.</p>



If  $R_{NAC}$ , the maximum EPU (Estimated Position Uncertainty) for a traffic target's the NAC code, is large compared to the symbol for that target on the CDTI display, the uncertainty in target position might be represented by a circle with center at the reported position of that target.

**Figure 1: Indicating Position Uncertainty on a CDTI Display.**

For an aircraft (or vehicle) on the surface, which reports length and width codes to indicate the dimensions of a rectangle that encloses that target, we should permit the CDTI display to indicate the horizontal extent of the aircraft. One way this might be done is shown in Figure 2 below.

