

AWIPS OB9 Requirements for ASR-11/ARSR-4 Integration Requirements Review 2/26/23/2008

Overview: A supplemental products generator (SPG) system will ingest data from the FAA's ASR-11 and/or ARSR-4 radar and will generate products following formats described in the WSR-88D-to-Class 1 User ICD. Differences between these products and baseline WSR-88D products are in the area of: radar id; product message codes; VCP; resolution in range, azimuth and time; and coverage range. For each radar, an SPG will generate a reflectivity product approximately once each minute and will distribute it to AWIPS following product distribution methods currently used by the WSR-88D. These products will follow the WSR-88D standard 3bit reflectivity product format (i.e., run-length-encoded "AF1F" packet for 8 level code) and data breakpoints (i.e., 18, 30, 41, 46, 50, 57 dBZ). Since the SPG was built by modifying a WSR-88D RPG to handle the characteristics of the FAA radars, a number of other product distribution messages will be exchanged between the SPG and AWIPS, as noted below. Since only one product type is generated for each of these radars (i.e., 8 level reflectivity product), to simplify the user interface and to reduce development effort, some of the familiar product distribution methods have been modified. In particular, the SPG will employ a line class 5 definition which is a combination of line class 1 (i.e., 2 PVC's so that AWIPS may continue to use the standard Comms Manager software) and class 4 (i.e., SPG will establish a default RPS list for AWIPS when a connection is established which will contain the one product that is generated).

D-2D REQUIREMENT	DESCRIPTION
1. AWIPS Product Requests	AWIPS shall provide a) RPS, b) OTR, and c) RMR does not need to provide product request capability for the reflectivity product derived from ASR-11 and/or ARSR-4 radar. <u>Instead, the SPG will distribute products to AWIPS.</u>
2. Product Ingest	<p>a) AWIPS shall support product ingest via the following interface types: a) Class 5 dedicated, 2) Class 2 one-time request, 3) SBN</p> <p>b) AWIPS shall support addition of radar Ids 4000-4099 (ARSR-4), and 4100-4399(ASR-11).</p> <p>c) AWIPS shall support addition of message codes 500 (ARSR-4 reflectivity) and 550(ASR-11 reflectivity). Product ranges and resolutions shall be:</p> <ul style="list-style-type: none"> - ARSR-4 refl. range: 0 to 250nm; resolution: 0.25nm x 1.41deg. - ASR-11 refl. range: 0 to 60nm; resolution: 0.5nm x 1.41 deg. <p>d) AWIPS shall support addition of VCP 100, which is severe weather mode. The products will be available on this VCP only.</p>
3. SPG Status, Request Response, Product List Messages	AWIPS shall process the following messages provided by an SPG in the same manner as it provides for the WSR-88D: a) General Status Message(msg code 2), b) Request Response Message (msg code 3), c) Product List Message (msg code 8)
4. Radar Unit Status	AWIPS shall provide a graphic display of the GSM in a manner similar to what is provided for the WSR-88D.
5. Free Text Message	AWIPS shall ingest Free Text Message Products (msg code 75) generated by the SPG and make them available to the AWIPS user in the same manner as provided for the WSR-88D
6. Display and processing of products	a) D2D shall display SPG products at the full resolution of the ASR-11 and ARSR-4 reflectivity data provided by a Supplemental Product Generator.

	b) D2D shall display 3bit ASR-11 and ARSR-4 reflectivity products using the default 3bit color tables used for WSR-88D reflectivity products.
7. Cursor Readout	AWIPS shall provide cursor sampling of ASR-11 and/or ARSR-4 SPG products
8. State Mosaic	AWIPS shall support the ability to configure D2D to include the ASR-11 and/or ARSR-4 reflectivity products in the state scale 0.5 degree hybrid scan reflectivity mosaic.
9. Archive	AWIPS shall support the ability for ASR-11 and/or ARSR-4 products to be included in the AWIPS archive function
10. Localization	AWIPS shall allow additional ASR-11 and/or ARSR-4 radars to be added solely through modification of files maintained by national data set maintenance (NDM)
11. Default RPS List	The reflectivity product will be added to the default RPS lists via Turn Key script that will be run when a WFO gets access to a ASR-11 or ARSR-4 SPG.