



International Civil Aviation Organization

Sixth Meeting of CNS/MET of APANPIRG

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- Agenda Item 10: Review:**
- a) implementation of the ISCS and SADIS**
 - b) transition to the final phase of WAFS**
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**WORLD AREA FORECAST CENTER (WAFS) WASHINGTON VIEW OF THE
REPLACEMENT OF INTERNATIONAL SATELLITE COMMUNICATIONS SYSTEM (ISCS)
COMPUTER WORKSTATIONS AND REMOVAL OF T4 FORMAT WIND/TEMPERATURE
CHARTS FROM THE ISCS BROADCAST**

(Presented by the United States)

Summary

As part of WAFS transition to the final phase, graphical products in T4 format will be removed from the WAFS satellite broadcast. Wind/temperature and significant weather (SIGWX) charts will be produced by States from the Gridded Binary Fields (GRIB) and Binary Universal Form for the Representation of Meteorological Data (BUFR) data files produced and provided by the two WAFCs. STAR4 workstation software is no longer supported. The STAR4 workstation software is not capable of producing all wind/temp charts required by Annex 3 from GRIB or any charts from BUFR, thus states in the ISCS footprint with STAR4 workstations have to procure new workstations to continue to provide the necessary charts when they are removed from the WAFS broadcast. This paper addresses the workstation change issue, and the timetable for removal of T4 products from the ISCS broadcast.

1.0 Introduction

The two WAFCs are in the process of changing the World Area Forecast System (WAFS) product suite as they work to meet the goal for transition to the final phase of WAFS provided by the WAFS Study Group. In the final phase of WAFS all graphical products required by the Standards and Recommended Practices (SARPS) in Annex 3, will be produced by States from the global gridded model data provided in GRIB format, global fields for SIGWX High (FL250 – 630) and for specified areas for SIGWX

Medium (FL100 - 250) provided in BUFR format. The goals were to remove the wind/temperature charts from the WAFS broadcast in mid 2003 and the SIGWX charts from the broadcast in late 2004.

Based on the following, WAFC Washington made the decision to delay removal of the wind/temperature charts from the ISCS broadcast in mid 2003, and to remove both the wind/temperature and SIGWX charts simultaneously in late 2004:

- The majority of States under the ISCS footprint use the STAR4 workstation to provide the necessary WAFS products. The STAR4 was produced by a U.S. company, Alden Electronics, which is no longer in business, and software upgrades are no longer supported. It was known the STAR4 could not be used to produce SIGWX charts from BUFR, so States were advised, beginning a year ago, to begin the planning process to procure new workstations and have them in place by no later than early 2004. A review of STAR4 software capabilities determined wind/temperature charts could only be produced for Mercator projections, and the production of those charts was very labor intensive. Since the STAR4 software is no longer being updated, polar stereographic charts could not be produced so would have to be continued on the ISCS broadcast, and there would be no shortcuts made available to make the task easier the Mercator charts.
- For States to produce the Mercator wind/temperature charts, training would have to be provided under World Meteorological Organization (WMO) auspices, with the assistance of the U.S., to the vast majority of States using the STAR4. The International Activities Office of the National Weather Service recommended the funds that would be used to provide assistance with training on the STAR4 would be better used if added to funding already expected to be provided to the WMO Voluntary Cooperation Program (VCP) to assist States with the purchase of new workstations. This recommendation was based on the fact that the STAR4 would only be used for about one year after the training to provide the wind/temperature charts.

2.0 STAR4 Workstation

When the STAR4 was first manufactured by Alden Corporation in 1994, it was state-of-the-art. The STAR4 used one of the largest personal computers available and incorporated the complex and difficult UNIX computer language to accomplish the product multitasking issues. The STAR4 was innovative and performed well. It contained a program, A PC Based Gridded Interactive Display and Dagnostic System (PCGRIDDS), originally designed for U.S. National Weather Service forecast offices, which for WAFS allows users to make specialized products such as wind/temperature charts from gridded numerical model data. After the unexpected death of the founder and president of Alden in 1999, the Corporation was sold and went out of business. No more STAR4 modifications, software changes or the 2000 date-rollover computer change were available from the defunct Alden Corporation.

WAFC Washington then undertook the task of contracting with the Global Sciences & Technology, Incorporated (GST) for the continued maintenance and availability of the STAR4 workstations. With GST providing the maintenance, the existing STAR4s continue to function.

As stated in the introduction the STAR4 will not produce SIGWX graphics as it will not handle BUFR code, and it will not produce wind/temperature charts in polar stereographic projection. Thus States currently using this workstation must replace it by early 2004 so they are capable of producing all

graphical products required by the SARPS in Annex 3 by late 2004 when both WAFCs are scheduled to terminate issuance of products in T4 format.

3.0 WAFS Workstation Replacement for the STAR4

The WAFS workstation technology has changed significantly. New WAFS computer workstations use software languages and communications protocols common to nearly all personal computers and the Internet, Windows, Windows 2000, Windows NT, LINUX and the Internet communications protocol TCP/IP. Replacement computer workstations for the STAR4 are now commonly available. At least six vendors manufacture a wide variety of meteorological and aeronautical computer workstations that are compatible with the WAFS. WAFS workstation capabilities should be matched closely with the capabilities required by each meteorological and aeronautical service. These WAFS workstations also vary widely in cost. STAR4 replacement WAFS workstation funding may be made available from the United States National Weather Service on a case by case basis through the WMO VCP. States need to be working on procurement of the new workstation at this time so they are purchased, delivered, installed and operational by early in 2004. Producing required products on the new workstations is simple. It's basically a point and click operation. It is even simple for States to provide products tailored to individual users such as charts covering specific routes rather than the Standard ICAO Areas. The U.S. expects the majority of training to be provided by the workstation manufacturer at the time the workstation is installed and made operational. The U.S. will assist with funding Regional Workshops to provide additional training in wind/temperature and SIGWX chart production from GRIB and BUFR, as needed, through the WMO. A listing of possible WAFS workstation vendors for States under the ISCS footprint is Attachment 1 to this paper. With the exception of GST, all manufacturers on the list are also suppliers of workstations for SADIS. GST recently contacted the U.K. Met Office requesting information on being a SADIS workstation provider.

4.0 Conclusion

In summary, WAFS Washington proposes:

- Continuing issuance of all required wind/temperature graphics in T4 format on ISCS through at least late 2004, when all T4 graphics, both wind/temperature and SIGWX, would be removed.
- The removal of all T4 graphics, both wind/temperature and SIGWX, would occur after States in the ISCS footprint have their new workstations, have received training from their workstation provider, and have at last one person who have attended a Regional training workshop, if required.
- The U.S. will, where required, assist with funding of the new workstations through WMO VCP, and will assist with funding of the regional Workshops through WMO.
- States, if they have not done so, begin the procurement process to ensure having a workstation delivered and operational by early 2004.

Attendees are invited to consider the information presented.

Attachment 1: WAFS Computer Workstation Vendors

Global Science & Technology, Inc.
9111 Edmonston Road
Suite 202
Greenbelt, Maryland 20770
USA

Ron Boyd, Vice President, Commercial Services
Phone 301 313-0164 Ext 209

COROBOR Systemes
134 Rue Julian Grimau
94400 Vitry
France

Michel Bourgues, Director
Phone 33 1 45 73 60 60

Info-Electronics Systems Inc.
1755 St-Regis
Suite No. 100
Dollard-des-Ormeaux
Quebec
Canada H9B 2M9

Dr. Harinder Ahluwalia, President
Phone 514 421-0767

Netsys International (Pty) Ltd.
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Menlo Park 0102
South Africa

Ryn Bodde, Managing Director
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Almos SIGMEX BV
Landzichtweg 70
PO Box 422
4100 AK Culemborg
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Alan Crisp, Sales and Marketing
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