

DCPC IMPLEMENTATION FOR WAMIS SERVICE

IMPLEMENTAZIONE DCPC PER IL SERVIZIO WAMIS

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Abstract

The role of WMO Information System (WIS) is global information system for managing weather, water and climate information across all those WMO Programmes. The service requirements of WIS are routine collection and dissemination service, timely delivery service for data and products and DAR (Discovery, Access, Retrieval) service based on ad-hoc request/reply “pull” via public internet. The World AgroMeteorological Information Service (WAMIS) has provided global agricultural community with various agrometeorological bulletins and products for a decade via internet service. KMA has undertaken to implement DCPC WAMIS, one of WIS centres, which can manage metadata and serve with data search and access for WAMIS products. The system of DCPC WAMIS is based on OpenWIS solution and satisfies WIS standard technical specifications. The implementing DCPC WAMIS contributes flexibility and robustness of agrometeorological information to intergovernmental organization as well as WMO community.

Keywords: WIS, DCPC, WAMIS, Metadata.

Parole chiave: WIS, DCPC, WAMIS, Metadata.

Introduction

The WMO Information System (WIS) is global infrastructure for managing available weather, water and climate information. The main functionality of WIS is DAR (Discovery, Access and Retrieval) services, as well as timely delivery for data and products. To operate WIS component with high robustness and reliability, WIS is categorized by three types of centres; Global Information System Centre (GISC), Data Collection or Production Centre (DCPC) and National Centre (NC).

Each WMO member has implemented its own WIS centre in agreement with WIS functional architecture and the WIS compliance specifications. Korea Meteorological Administration (KMA) has undertaken a project to share agricultural meteorological information with WMO community. The World AgroMeteorological Information Service (WAMIS) will be available in the form of catalogue and metadata provided by DCPC WAMIS.

Background

In order for accurate, timely and cost-effective delivering agrometeorological information, the Commission for Agricultural Meteorology (CAgM) held in an Expert Group Meeting on Internet Applications for Agrometeorological Products in 2002 and WAMIS was deployed.

WAMIS provides global agricultural community with the various agrometeorological bulletins and products issued by WMO members. The information is produced on either a weekly, monthly or yearly time period and in the form of web page or PDF. The website of WAMIS consists of one main site and three mirror sites. The provision of internet service is assorted by six regions and 52 nations.

KMA took initiative steps into agrometeorological service on the basis of WIS in 2009. By utilizing Open source Geonetwork software, WAMIS portal system, K-WIS WAMIS was installed. It created and enrolled metadata catalogue of 52 national agrometeorological products so

that data and products can be searched and accessed in K-WIS WAMIS.

Meanwhile, international project, OpenWIS Consortium, to develop solutions for operating WIS centre has been carried since 2009. OpenWIS consortium, non-profitable entity, founded by BoM, KMA, Met Office, MF and MFI develops and manages OpenWIS software which uniquely fulfils GISC, DCPC or NC functions based on open source components.

GISC Seoul and 3 DCPCs in KMA were officially endorsed by 64th WMO Executive Council in 2012. GISC Seoul started its full operation in March 2013 and DCPC WAMIS is being established and will serve with regular operation in the beginning of 2014.

Implementing DCPC WAMIS

The system of DCPC WAMIS is based on OpenWIS solution and satisfies WIS Specifications which are required by WMO standards. DCPC WAMIS is composed of Administration portal, User portal and WAS/DB.

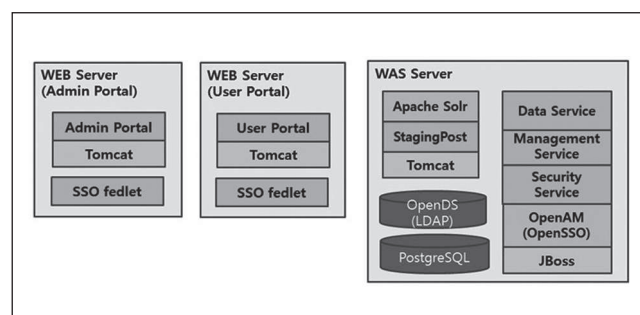


Fig. 1 - The deployment of the software configuration for each Server in DCPC WAMIS.

Fig. 1 - Distribuzione della configurazione del software per ciascun server in DCPC WAMIS.

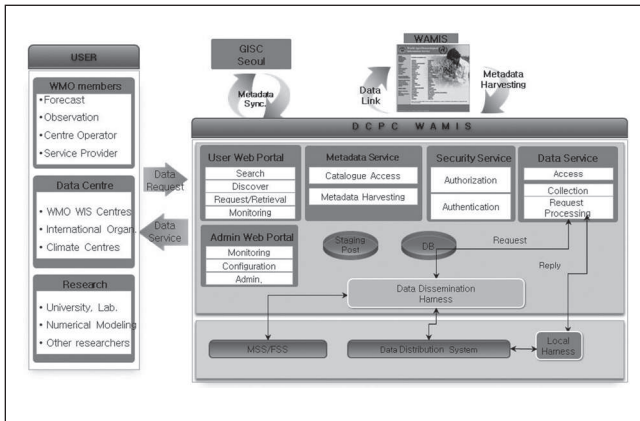


Fig. 2 - The architecture of DCPC WAMIS and data service flow among DCPC, GISC, WAMIS portal and users.

Fig. 2 - Architettura di DCPC WAMIS e flusso di dati tra i portali DCPC, GISC, WAMIS e gli utenti.

Administration portal provides administrator or operator with setting up DCPC functions, monitoring and controlling the system. User portal is accessible by authorized users and provides with searching metadata, requesting and subscribing to the data or products. WAS server plays a key role in the functions which are data collection, metadata and data management, system controlling, user access controlling, Database, Single Sign On etc.

For the compatibility of system environment with OpenWIS features, IT infrastructures such as computer resources, data exchange network and computing facilities etc. are fulfilled and elaborate manuals on and guidance to DCPC WAMIS are defined.

To take the most advantage of WIS, metadata representing all kinds of agrometeorological products in WAMIS are handled in provision of searching information in DCPC. The metadata created and managed by DCPC WAMIS are harvested by GISC Seoul and simultaneously synchronized by other

GISCs so that any user in WIS community can discover and access WAMIS products on the DCPC WAMIS.

In addition, digital climagrams which gives climatological information for agriculture and arboreal growth are routinely produced by KMA. It is effectively useful for domestic agricultural community to adapt climate change in specific area on account of its highly horizontal resolutions, 30m and 270m, and various analyzing agro-climate information in the Korean Peninsula. DCPC WAMIS is designed in creating metadata catalogue and offering DAR services for digital climagrams on internet networks.

Conclusions

The role of WIS is interconnected global information system and common infra system across all those WMO Programmes. The service requirements of WIS are routine collection and dissemination service, timely delivery service for data and products and DAR service based on ad-hoc request/reply "pull" via public internet.

For sharing agrometeorological bulletins and products with global agricultural community, KMA has undertaken to implement DCPC WAMIS, one of WIS centres, which can manage metadata and serve with data search and access for WAMIS products.

The implementing DCPC WAMIS contributes flexibility and robustness of agrometeorological information to intergovernmental organization as well as WMO community. The service in DCPC WAMIS is expected to extend various numerical products in accordance with other WMO programmes.

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