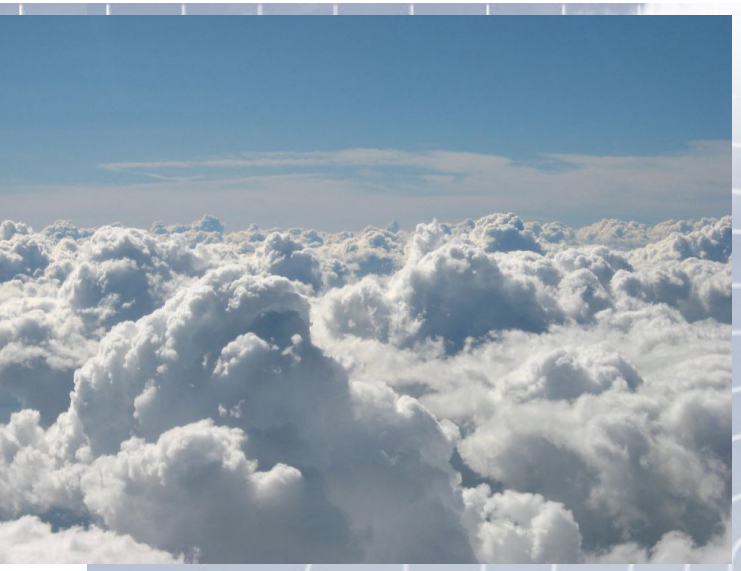


MCH

Spanish Cooperation to provide Climate Services

AFRIMET Conference #06

Nouakchott, Mauritanie, April 2016

nombre y posición
e-mail

INDEX

- Introduction
- Main options
- Requirements
- Documentation
- Community of users
- Shall we use it?

MCH - INTRODUCTION

- **MCH** = **M**eterological, **C**limatological and **H**ydrological database management system
- **Open source** database and software for:
  - Management of data and graphical representation
  - Developed by Mexican experts
  - Adapted and financially supported by CiMHET (Conference of Directors of IberoAmerican Meteorological and Hydrological Services)

MCH - INTRODUCTION

- MCH was transferred to WMO by the PRs of Spain and Mexico in 16th Congress (2011) for its implementation in other NMHSs
- Can be used in a single computer or in a server/client configuration in a local network.
- It is possible to connect automatic stations and collect real time data.
- Widely used in the IberoAmerican community of SHMN, and also by CIIFEN

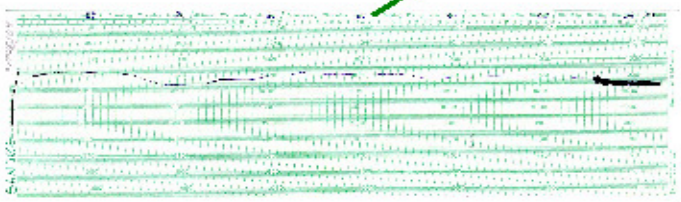
MCH - INTRODUCTION

- Data entry







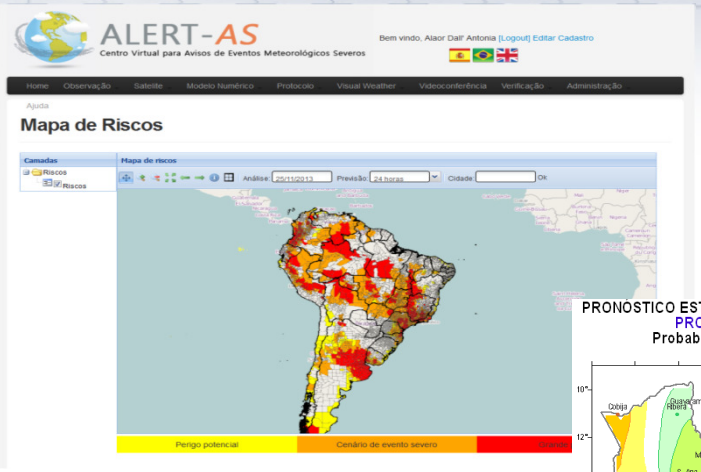



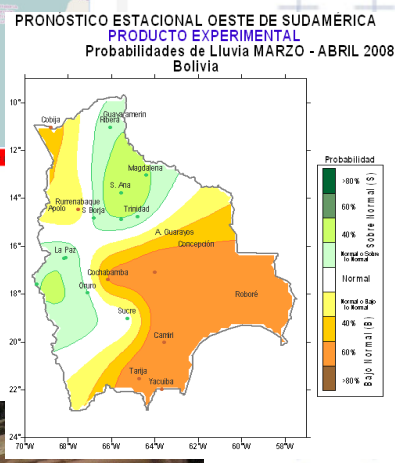
MCH Data Base

MCH Data Base

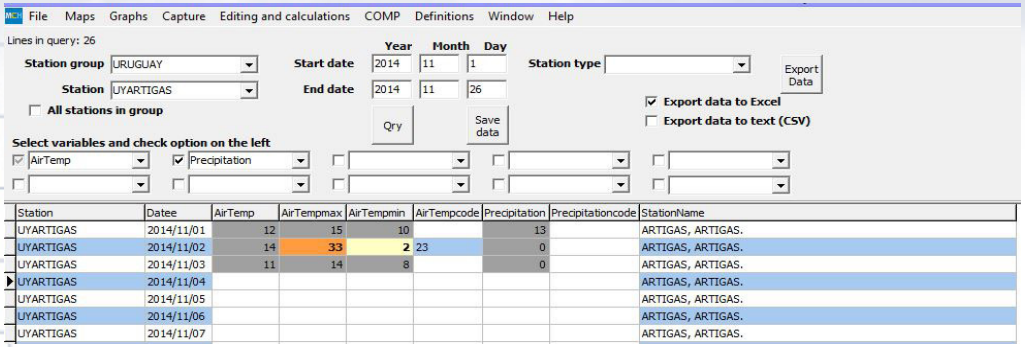
MCH - INTRODUCTION

- It was developed in Spanish and translated to French and English
- Used in many other countries outside IberoAmerican region, mainly in the hydrological community.
- More and more demanded to support climatological information in NMHSs worldwide

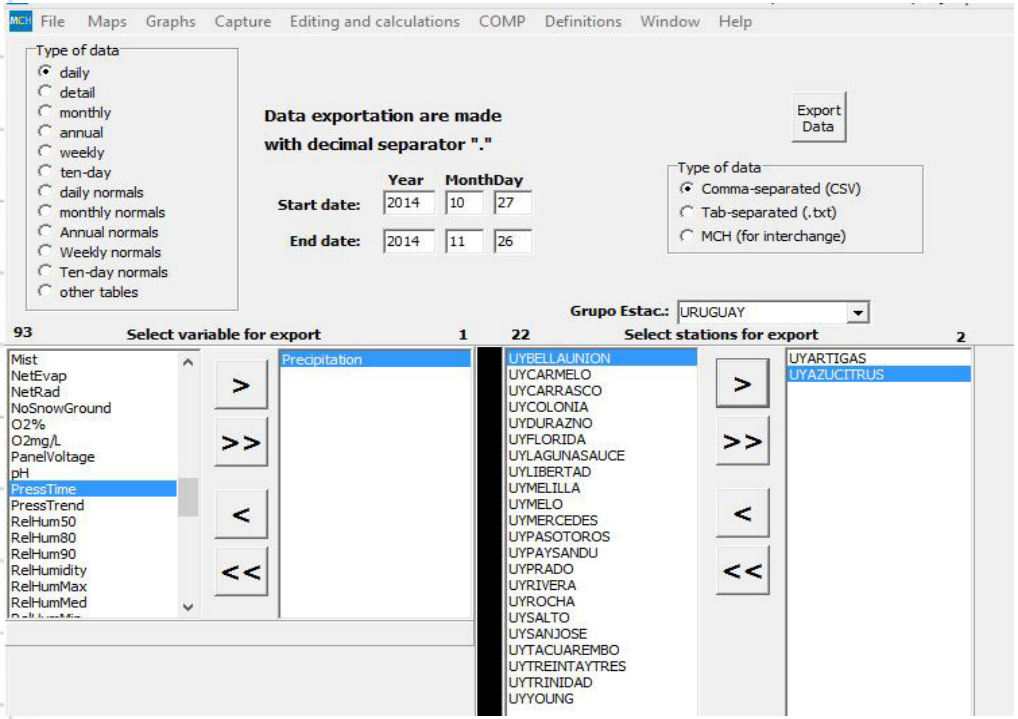




MCH - MAIN OPTIONS



Manual data capture interface



Data exportation interface

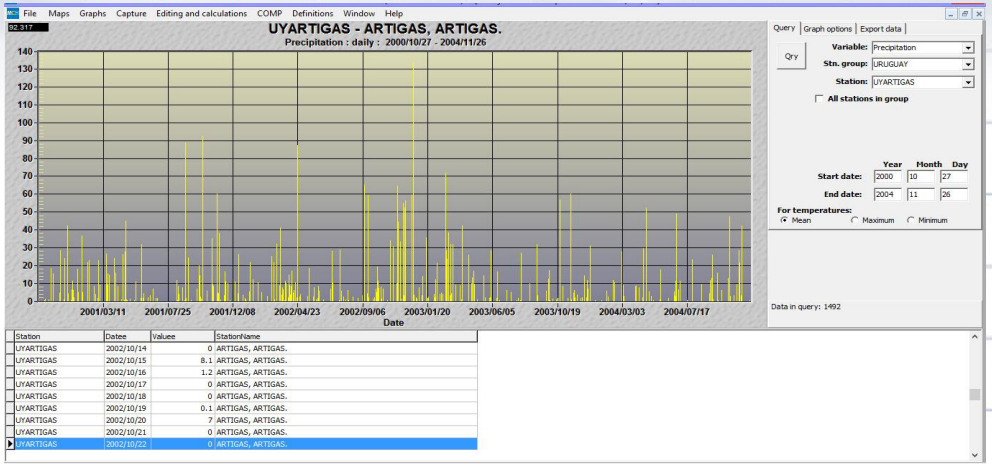
Data capture, importation and exportation interfaces

- Data validation rules (including 4 levels of alert for each variable)
- Manual data capture (from one to ten variables simultaneously)
- Data importation in text tab-separated (.txt) format and .mch format
- Data exportation in .cvs, .txt and .mch format

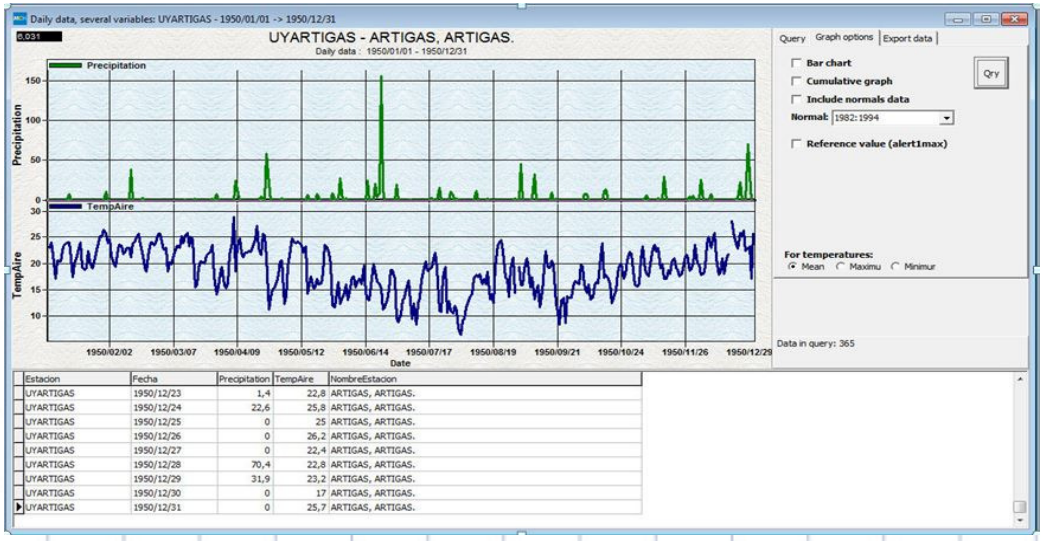
MCH - MAIN OPTIONS

Data visualization interfaces

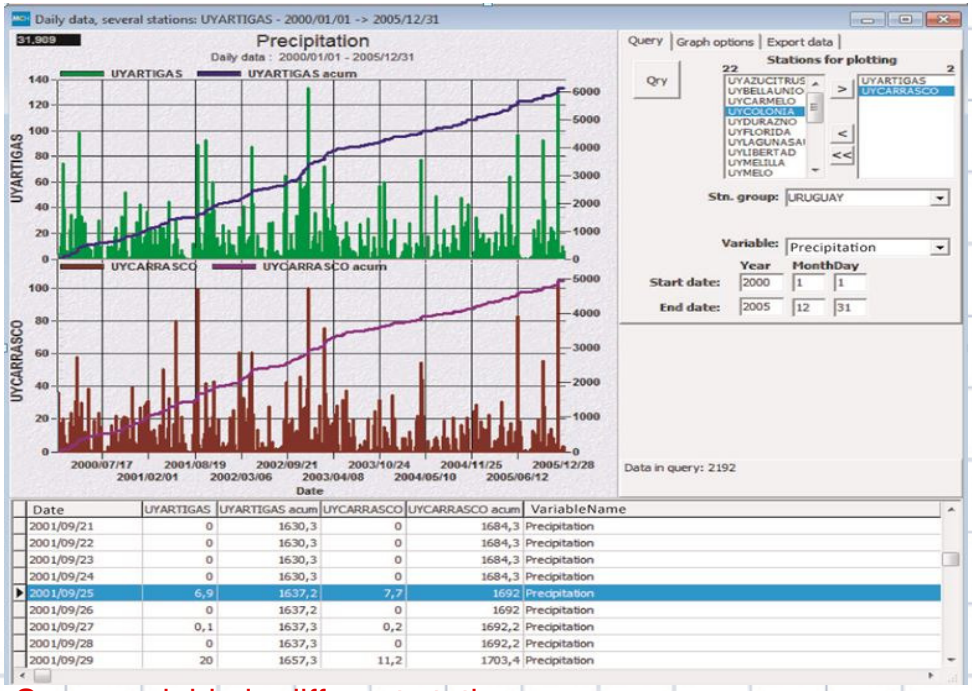
- Tables
- Single Graphics
- Comparative graphics
- Maps
- Sketch maps
- Animations



Graphical and table



Two variables in one picture



Same variable in different stations

MCH - MAIN OPTIONS

DIRECCION NACIONAL DE METEOROLOGIA
DIRECCION DE CLIMATOLOGIA Y DOCUMENTACION
DIVISION SERVICO PLUVIOMETRICO NACIONAL AÑO 2007
ESTACION METEOROLOGICA Nº 86330 ARTIGAS

DIA/MES	ENE.	FEB.	MAR.	ABR.	MAY.	JUN.	JUL.	AGO.	SET.	OCT.	NOV.	DIC.
1							0.2			8.0		
2				18.2					8.7		13.8	
3				0.1								
4	9.8			1.0						4.6		10.0
5				1.4						0.1		
6				0.1				0.2			1.4	0.2
7									17.6		0.6	
8		0.2					0.2	3.3			3.9	
9		11.6		52.2						1.1	18.9	6.6
10												1.3
11	9.8		24.1									
12			30.3									
13										0.6		
14						0.1						
15				3.7					0.1			
16	1.1					0.9						1.0
17					12.0							
18		0.1								6.2		
19					0.1							25.6
20		27.3				0.2		10.1				
21		0.3							4.0	7.1		
22			25.9								13.7	
23	31.5	6.0		7.3						0.2		
24	81.6	1.8		97.8				5.3	2.9	5.3		
25	55.2							0.7	6.2			0.1
26	18.5					0.1			5.9			
27		0.4				0.9			0.2			
28	3.5	10.9	24.1									
29	13.9		11.1								25.3	
30					0.1				0.4	0.1		
31	5.5											
Suma	230.4	58.6	115.5	181.8	12.2	2.2	0.4	19.6	46.0	33.3	77.6	44.8

Datos Cargados

ESTACION:	UYARTIC
VARIABLE nombre de la tabla:	ddprecipitacion
DSN de la base de datos del MCH:	MCHUY
AÑO:	

Cargar da

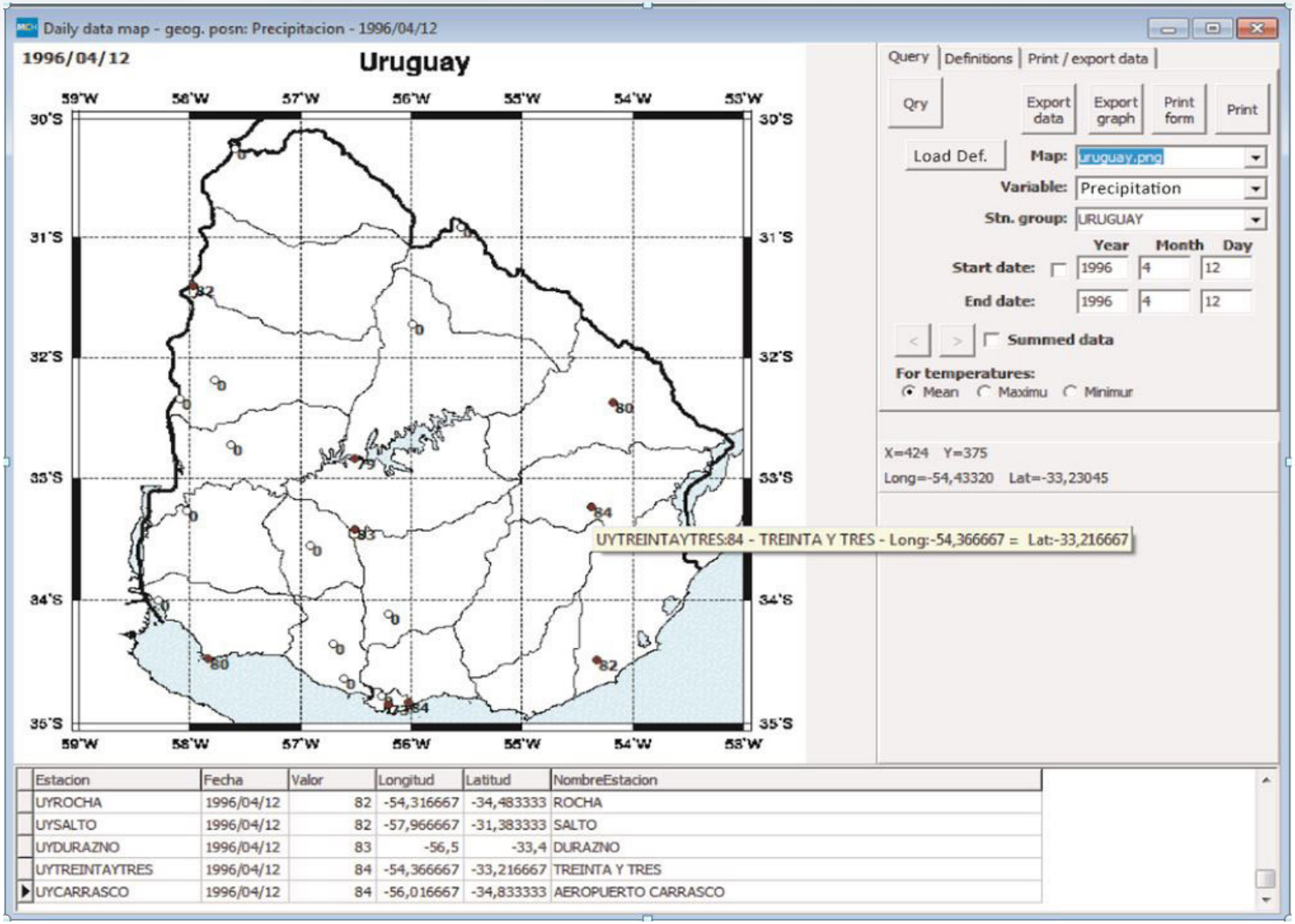
INSTRUCCIONES DE MANEJ
Este formulario cargar datos de la b
Los datos se toman de los datos diarios

1.- Teclee la clave de la estación en casill
2.- Teclee el año a consultar
3.- Dato opcional es modificar el DSN de
4.- Aplique el botón de comando "Carga

Notas adicionales:
- Es necesario que en Visual Basic (Alt-F11), en el men
Referencias esté activado el manejo de:
MicroSoft ActiveX Data Objects 2.5 Library
- El nivel de seguridad de macros en Herramientas / Ma
debe ser Medio para que se puedan ejecutar las macr

Reports and tables in Excel format

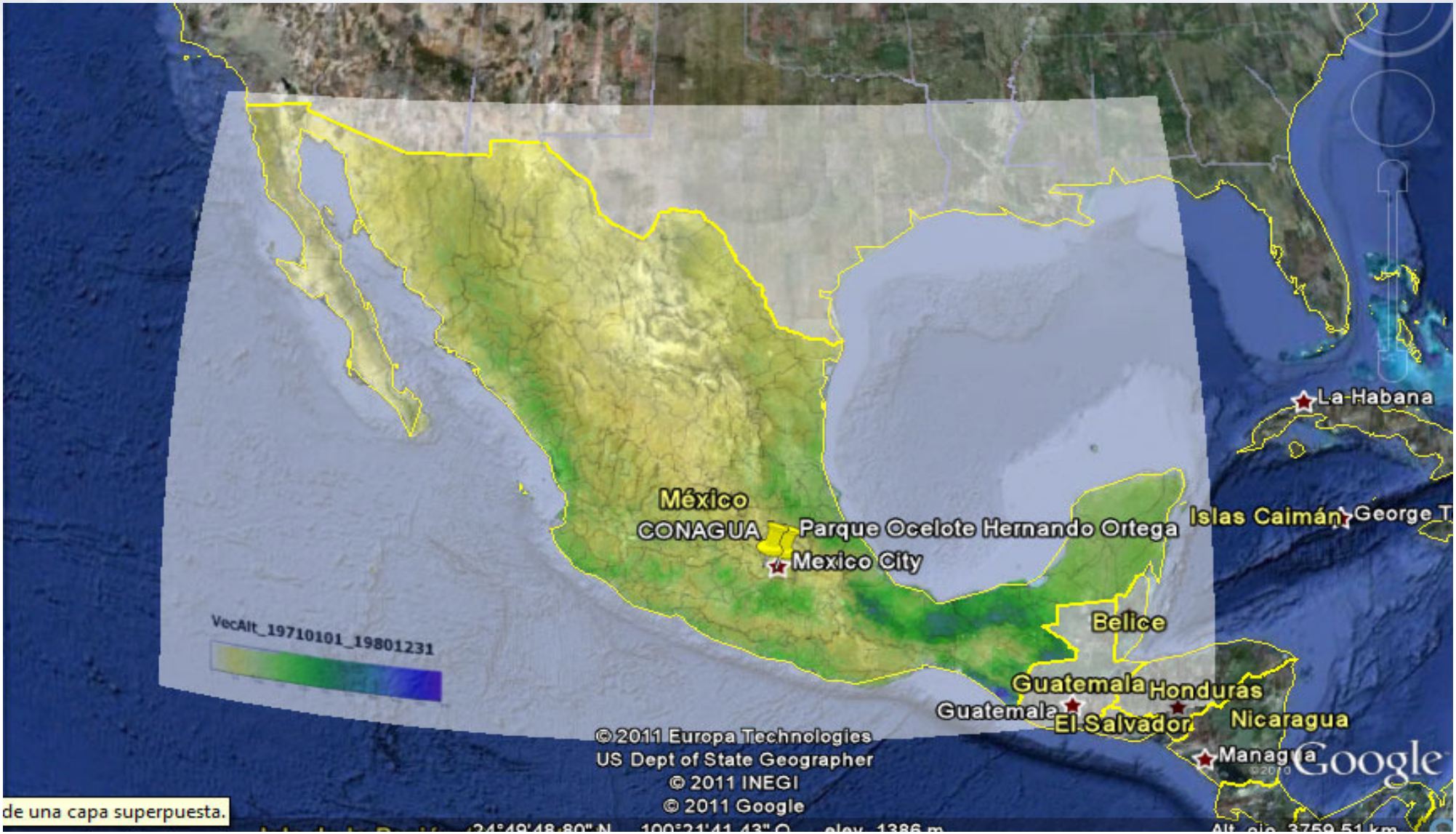
MCH - MAIN OPTIONS



Estacion	Fecha	Valor	Longitud	Latitud	NombreEstacion
UYROCHA	1996/04/12	82	-54,316667	-34,483333	ROCHA
UYSALTO	1996/04/12	82	-57,966667	-31,383333	SALTO
UYDURAZNO	1996/04/12	83	-56,5	-33,4	DURAZNO
UYTREINTAYTRES	1996/04/12	84	-54,366667	-33,216667	TREINTA Y TRES
UYCARRASCO	1996/04/12	84	-56,016667	-34,833333	AEROPUERTO CARRASCO

Data representd on a map

MCH - MAIN OPTIONS



Display using Google Earth

MCH - MAIN OPTIONS

Definitions and Metadata

- Stations definition
- Variables definition
- Data validation rules
- Define users and users roles
- Metadata for stations
- Metadata for instruments

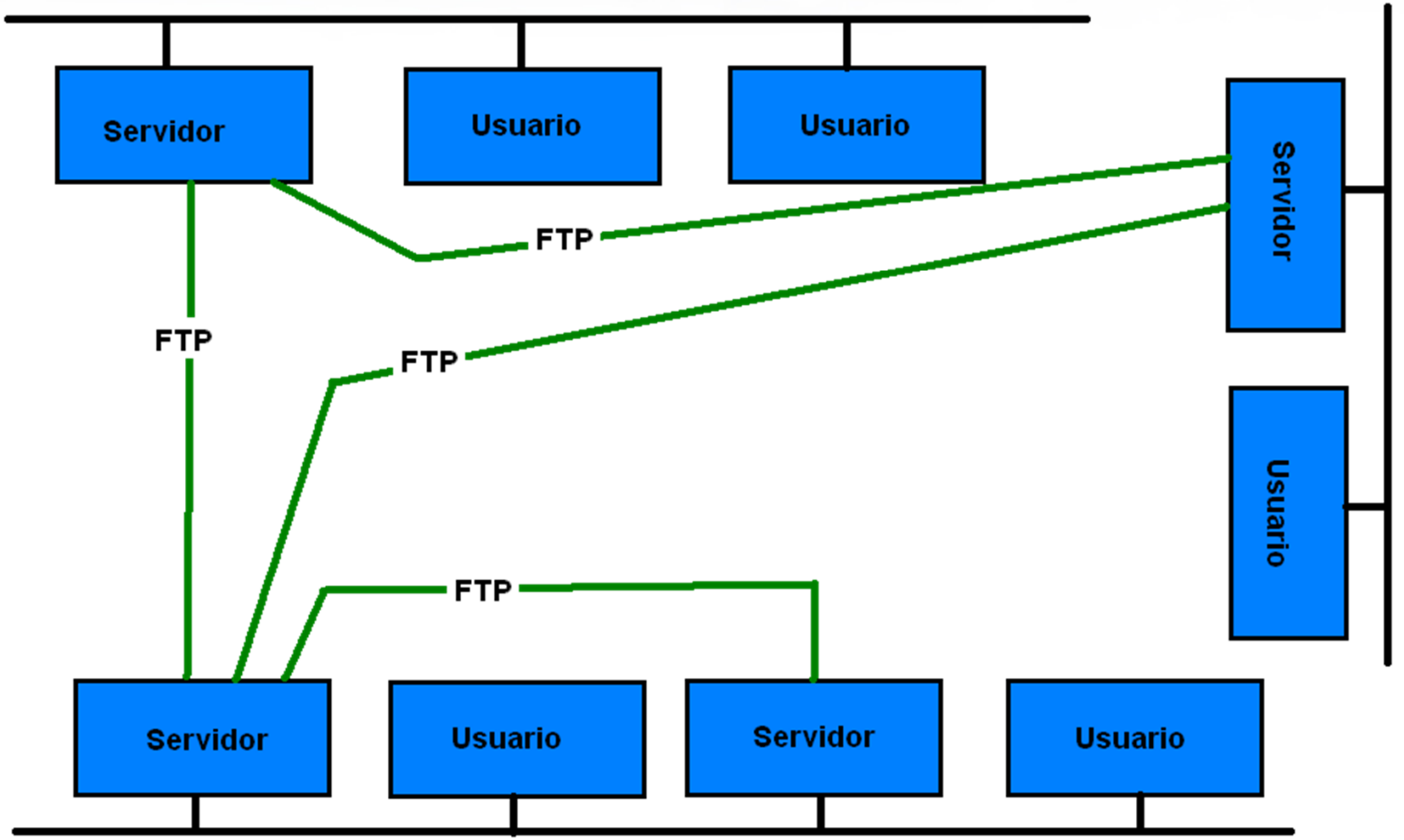
Data analyses and processing

- Data availability
- Missing data
- Convert detailled data to daily data
- Generate weekly,dekadal, monthly, annual data
- Normals
- Isolines
- Derived variables

MCH - REQUIREMENTS

- Minimum technical requirements
  - Windows Operating system (Windows 2000 to 8)
  - 1 GB of RAM
  - Processor at 1.5 GHz
  - Display: video resolution 1024 x 768
  - 5 GB hard disk space

MCH - REQUIREMENTS



MCH - DOCUMENTATION

- Administrator Manual
- Simplified User Guide
- User Manual
- Support on-line.
- Manual for developers. Source code

MCH - COMMUNITY OF USERS

- There is a community of users since 2013 http://www.wmo.int/chy/communities/course/view.php?id=3
- The regions with more users are IberoAmerica, West Africa and the Balcans in Europe.
- Now the community of users intends to harmonize all the software developed during the last years.
- MCH User Community web site is written only in English
- It has more than 50 users from all over the world

MCH - COMMUNITY OF USERS

www.wmo.int/chy/communities/course/view.php?id=3

MCH User Community

You are logged in as Claudio Caponi (Logout)

Home ► My communities ► Databases ► MCH

Navigation

- Home
- My home
- Site pages
- My profile
- Current course
  - MCH
    - Participants
    - Badges
    - General
    - About MCH
    - Updates
    - Installation
    - Tutorials
    - Frequently asked questions
    - Additional modules and Development tools
    - Learn more
- My communities

Administration

- My profile settings

Meteorological, Climatological and Hydrological (MCH) data base management system

MCH forum

An open forum to ask questions or share experiences about MCH

Search forums

Go

Advanced search

Online users

(last 5 minutes)
Claudio Caponi

Messages

No messages waiting
Messages

About MCH

Through the technical cooperation project PROMMA (Modernization of the Water resources Management in Mexico), a water and climate database management system (DBMS) suited to the needs of the Mexican National Water Commission was developed in Spanish. At the end of the project, Mexico made it available to the Programme of Cooperation for the Iberoamerican NMHSs, which, thanks to a Trust Fund established by Spain in WMO to support its activities, added a meteorological component and adapted it to the needs of a more general audience. The Climate and Water Department has now translated this open-source, freely available software and its user manual to English and is planning to translate it in French in the near future.

During CG-XVI, a side event was held to present the background of the system, explain its capabilities and offer the opportunity to NMHSs in need of such a system to apply for its installation and related training programme. The event included a semi-formal transfer (no legal documents were signed) of the MCH from the Programme of Cooperation for the Iberoamerican NMHSs to WMO. [Read more]

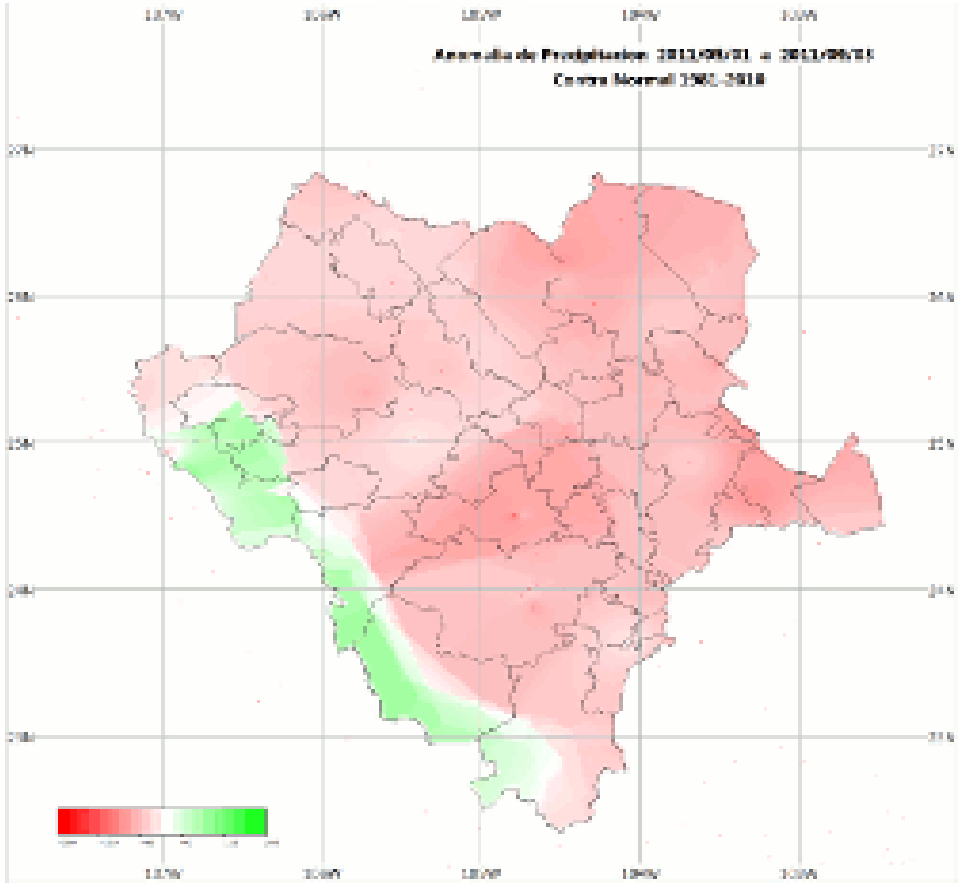
(From left to right: Avinash Tyagi, Ricardo García Herrera and Felipe Adrián Vázquez Gálvez)

MCH - COMMUNITY OF USERS

- There have been several meetings and workshops trying to harmonize and find a consensus for a new version of MCH

MCH - SHALL WE USE IT?

- The database and software are simple, customizable and freeware
- It offers solutions to store, analyze data and generate reports on large amount of meteorological, climatological and hydrological data
- It has been designed for:
  - NMHSs **without any database management system.**
  - NMHSs looking for a **license-free** solution.



MCH – SHALL WE USE IT?

- It has been decided to use the original version donated to WMO
- The last updates were made last year: version MCH2015
- New installations are supported by WMO
- English version
  - Albania
  - Belize
  - Bosnia and Herzegovina
  - Curacao
  - **Ghana**
  - Kosovo

MCH - SHALL WE USE IT?

- Spanish version
  - CIIFEN
  - Costa Rica
  - Dominican Republic
  - Guatemala
  - Honduras
  - Mexico (National Water Commission)
  - Paraguay
  - Peru
  - Uruguay
  - Venezuela

MCH - SHALL WE USE IT?

- Coordinated at WMO by Nirina Ravalitera
- Spain supports the project by an “in kind” contribution: Our expert, José Antonio Guijarro, takes part in training missions to cooperate with NMHS that want to use MCH.

- **AFRIMET could coordinate the process of installation and serve as a forum to exchange experiences.**
- **AEMET would provide the necessary training**

MCH – SHALL WE USE IT?

Available on request through the Permanent Representative with WMO