

**Technical collaboration and training
between
National Water Agency (ANA)
and
United States Geological Survey (USGS)**
ANA headquarters– Sala de Vidro
Brasília, Brasil

Period: march 16th to 20th 2015
Draft Agenda

March 16th, Monday

09h00-09h15: Opening

09h15-10h30: ANA's presentation: General overview of the systems in use by ANA related to hydrological data management:

10h30-10h45: coffee-break

10h45-12h00: ANA's presentation about the systems and corresponding workflow on hydrological conventional data:
- Data acquiring, ingestion and publishing of conventional data

12h00-14h00: Lunch time

14h00-15h50: Discussion: Selected needs concerning conventional data (brief ANA's presentation, covering the main topics for discussion)
- ADCP data management
- Sediments data management
- Laboratorial water quality data management
- Site information management (location, installed equipment, etc.)

15h50-16h10: coffee-break

16h10-18h00: Discussion: USGS's suggestions and guidelines concerning conventional data management and software needs

March 17th, Tuesday

9h00-10h30: ANA's presentation about the systems and corresponding workflow and data correction on hydrological automatic (telemetric) data:

- Ingestion of real-time data from multiple transmission paths
- Application of corrections/shifts to time-series data
- Data access for situation rooms

10h30-10h45: coffee-break

10h30-12h00: USGS's presentation about its own systems and corresponding workflow and data correction on hydrological automatic (telemetric) data.

12h00-14h00: Lunch time

14h00-15h50: Discussion: Identified needs concerning automatic (telemetric) data (brief ANA's presentation, covering the main topics for discussion):

- Necessity to update/improve tools and workflow involved in data-acquiring, processing and insert of telemetric data:
 - Performance improving
 - Existing commercial software
- Application of correction to real-time data series (raining, stage and discharge)
 - Application of shift/offset
 - Transmission gap filling
- Processing and storing data-loggers *retrieves*

15h50-16h10: coffee-break

16h10-18h00: Discussion: USGS's suggestions and guidelines concerning automatic (telemetric) data management and software needs

March 18th, Wednesday

9h00-10h30: ANA's presentation about systems on conventional data correction and revision

- SiADH system

10h30-10h45: coffee-break

10h30-12h00: Discussion: USGS's suggestions and guidelines concerning data quality

- *Data-aging and revision capabilities*

12h00-14h00: Lunch time

14h00-15h50: USGS's presentation about the implementation of the next generation WRIT (Water Resources Information Technology)

- Aquarius system

15h50-16h10: coffee-break

16h10-18h00: Discussion: USGS's suggestions and guidelines concerning the use of commercial softwares

March 19th, Thursday

9h00-10h30: USGS's presentation:

Issues concerning data migration to Aquarius database

- Unsupported data types
 - Site descriptions
 - Water quality data
- Migration tools
- Interoperability with existing systems

10h30-10h45: coffee-break

10h45-12h00: Discussion: USGS's suggestions and strategies aspects concerning the use of commercial software for managing hydrological data

- Independency strategies from the provider company
- Proprietary data model
- Updates and evolution

12h00-14h00: Lunch time

14h00-15h50: Discussion: Overall database modeling (brief ANA's presentation, covering the main topics for discussion)

- Unified storage for conventional and telemetric data
 - Complex modeling for dealing with both types of data
 - Diversity of specific databases (Hidro, Telemetria, BDHR, HidroSAT, SAR, CotaOnline, etc.)
 - Integration of different databases
- How to store time-series statistics (as a new time-series or as a view?)
- How to store new time-series created by hydrological models (ex. Flow discharge model, regionalization, etc.)

15h50-16h10: coffee-break

16h10-18h00: Discussion: USGS's suggestions and guidelines concerning the use of database modeling and integration

March 20th, Friday

9h00-10h30: Technology frameworks and the software development workflow (brief ANA's presentation, covering the main topics for discussion)

- Diversity of software development framework (need to unify)
- Guidelines to choose the development framework that best suits the needs
- Developing process: Internal team or software factory
- Software development quality assurance process

10h30-10h45: coffee-break

10h30-12h00: Discussion: USGS's suggestions and guidelines concerning the software development process

12h00-14h00: Lunch time

14h00-15h50: USGS's overall assessment on systems and workflow for hydrological data management at ANA

15h50-16h10: coffee-break

16h10-18h00: Final considerations