moving weather

Message and file switching system

Put your **data flow under control**

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ibl weather software solutions

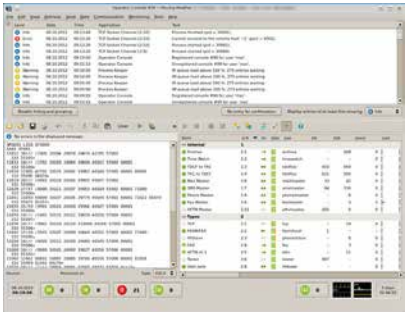
OVERVIEW

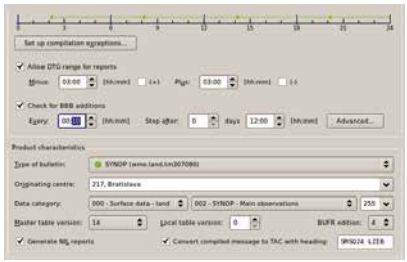
Your message and file switching system

Moving Weather is an automated meteorological switching system used for the routine distribution of meteorological bulletins as well as for generic file switching. It supports transformation of meteorological data from one format to another, as well as report collection and compilation in all used formats (TAC, BUFR, IWXXM).

MAIN FEATURES

- Automatic WIS 2.0 data publisher and subscriber
- Automatic file switching system
- Automatic WIS/GTS-like message switching system
- Report collection and bulletin compilation (incl. BUFR, IWXXM)
- Support for many data formats (incl. GRIB, BUFR, IWXXM, etc.)
- Many TCP/IP-based protocols (SFTP, HTTP/HTTPS, SMTP, POP3, IMAP, FTP/FTPS, MQTT/MQTTS, AMQP/AMQPS, X.400/AMHS, etc.) as well as legacy non-TCP/IP-based protocols
- Regional OPMET database
- Modern and easy-to-use user interface
- Scalable architecture





AUTOMATIC FILE SWITCHING

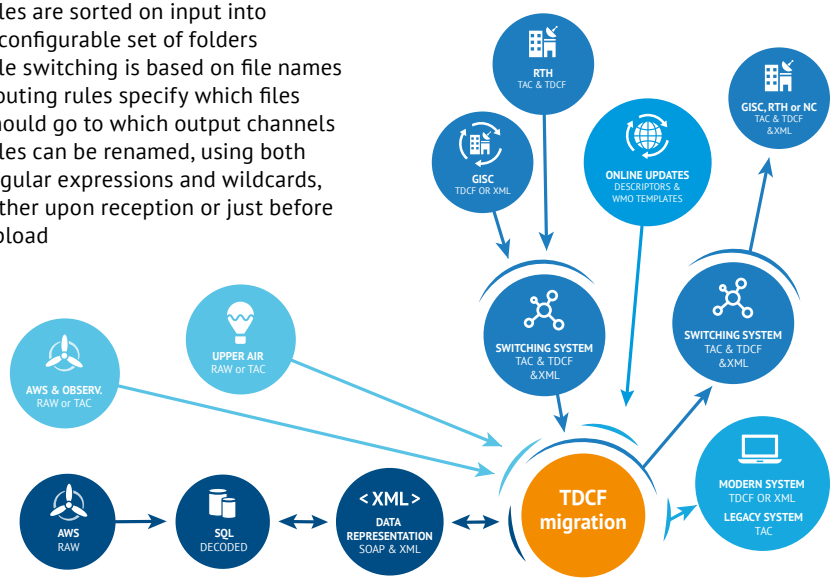
Moving Weather is able to store and forward not only WMO bulletins, but also any other non-WMO files.

- Files are sorted on input into a configurable set of folders
- File switching is based on file names
- Routing rules specify which files should go to which output channels
- Files can be renamed, using both regular expressions and wildcards, either upon reception or just before upload

BULLETIN COMPILATION

Moving Weather can automatically collect reports of many types (SYNOP, SHIP, METAR/SPECI, TAF, PILOT, TEMP, CLIMAT, BUOY and others) and compile new bulletins out of the collected reports. This applies to the TAC, BUFR, and IWXXM forms of the reports.

- Reports are stored separately from bulletins, allowing for different storage duration periods
- Reports pass through configurable validity/syntax checks (including XSD and Schematron for IWXXM) and optional quality control checks
- Compilation of bulletins according to predefined rules
- Automatic compilation of additional RRx, CCx, AAx bulletins

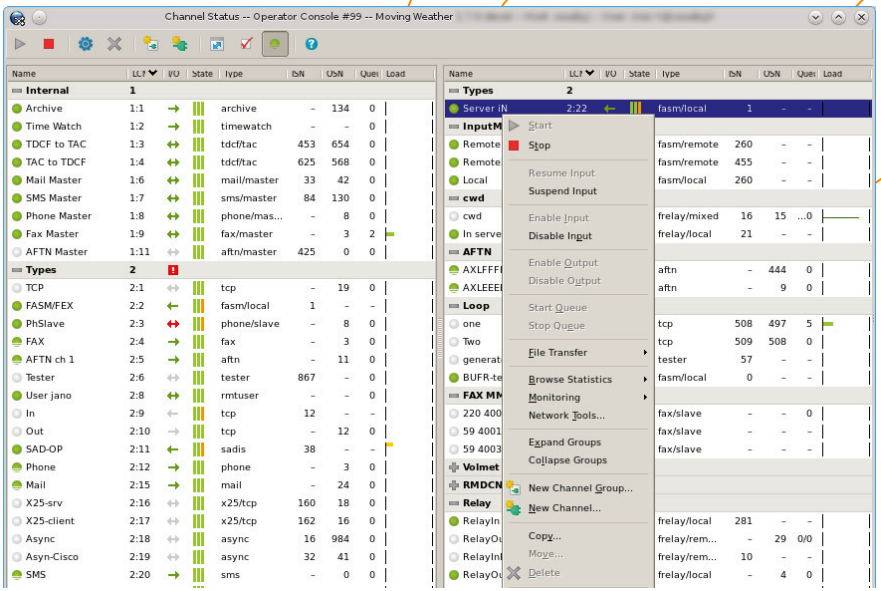


POSSIBILITIES
monitoring and others

COMMUNICATION CHANNELS

There are many types of data circuits and communication lines supported in Moving Weather:

- Publish-subscribe over AMQP/AMQPS, MQTT/MQTTS, Amazon SNS/SQS
- FTP/FTPS, SFTP, SCP, HTTP/HTTPS, Amazon S3, Azure Blob
- E-mail (IMAP, POP3, SMTP)
- WMO TCP Socket
- AMHS (X.400), AFTN
- SADIS API, Secure SADIS FTP
- Integrated file server (FTP/FTPS)
- Integrated web service supporting HTTP/HTTPS ingestion
- Posting on social media
- CAP upload to Meteoalarm
- Asynchronous lines
- Phone, fax, telex



REALTIME MONITORING

- Monitoring of TAC, BUFR, and IWXXM reports received from a predefined set of originating stations
- Graphical visualization of missing reports using color
- Possibility to automatically issue cutomizable notifications about missing or incorrect reports
- Bulletin monitoring with a configurable alarm period
- Possibility to automatically issue requests for missing bulletins

HIGHLIGHTS
unique features

EFFORTLESS TRANSITION TO THE LATEST CODES

With Moving Weather, your organization can seamlessly support modern data formats such as BUFR and IWXXM.

- Possibility to decode reports from BUFR/IWXXM bulletins and compile new BUFR/IWXXM bulletins from these reports
- Integrated possibilities to convert between BUFR/IWXXM and TAC bulletins to BUFR/IWXXM and vice versa
- Easy and straight-forward integration of the BUFR/IWXXM encoder/decoder with other data sources (databases) either directly using SQL SELECT and/or INSERT or through XML files with customizable XSLT transformations
- Allows legacy systems to be utilized until upgraded or replaced, by being able to provide TAC contents for BUFR/IWXXM bulletins

Moving Weather's Recode Weather Module offers an elegant and seamless method for the support of the latest code forms:

- Generating BUFR/IWXXM code directly from the databases of the production systems
- Utilizing approved WMO templates
- Decoding data from other sources into NMC central database
- Providing of a decoding support for data processing systems of NMC

Forms supported for BUFR encoding and decoding

Category 1 SYNOP, SYNOP MOBIL, PILOT, PILOT MOBIL,TEMP, TEMP MOBIL, TEMP DROP, CLIMAT

Category 3 AMDAR

Category 4 SYNOP SHIP, BUOY, BATHY, TESAC, WAVEOB, TRACKOB

Other data AWS

Forms supported for IWXXM encoding and decoding

OPMET METAR/SPECI, TAF, SIGMET, AIRMET, Advisories

Recode Weather is easily extensible to support future codes, new templates approved by WMO, or national and custom templates.

WMO INFORMATION SYSTEM

Moving Weather makes the migration to WIS 2.0 a non-issue. It supports the new method of data exchange based on notifications and publish-subscribe protocols (MQTT/S, AMQP/S, Amazon SNS/SQS) as well as WIS 1.0 / GTS-like data distribution, seamlessly interconnecting modern systems with legacy ones.

- Subscribing to Global Brokers, multiple wildcarded topics per single chann
- Support for data in the payload of MQTT, or AMQP message
- Support for the download of data based on URLs in received notifications
- Publishing of data notifications to fixed or generated topics
- Notifications can advertise data in the message or file database over Moving Weather's internal web service (REST API)
- Notifications can advertise data uploaded to external file server (HTTPS, SFTP, ...)
- Notifications can advertise data discovered at an external file server without downloading them.
- UI for interaction with Global Discovery Catalogues (metadata management)

COMPATIBLE
compliance and integration

COMPLIANCE WITH STANDARDS

Moving Weather fully complies with the following standards and recommendations:

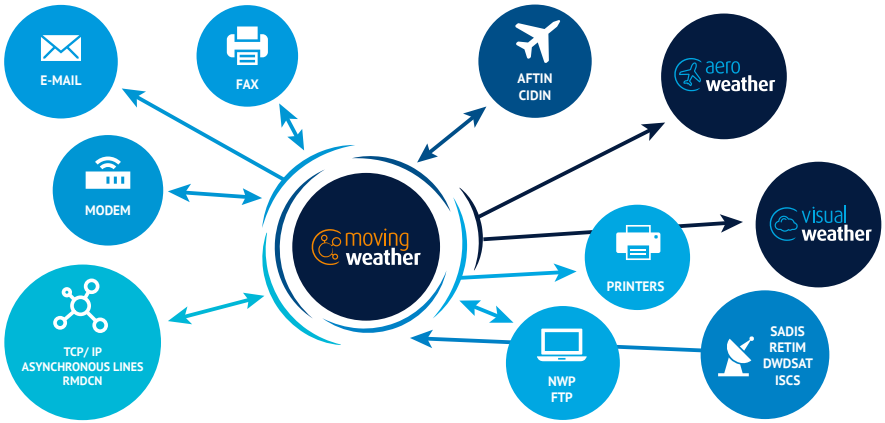
- WMO Manual on WIS (No. 1060, vol. 1 and 2)
- WMO Manual on Codes (No. 306), incl. binary codes (GRIB, GRIB2, BUFR)
- WMO Manual on GDPS (No. 485)
- WMO Manual on GTS (No. 386)
- ICAO Annex 3, incl. Amendment 81
- ICAO Annex 10 and EUROCONTROL SPEC-136 on the AMHS
- ICAO Doc 10003 (Manual on the Digital Exchange of Aeronautical Meteorological Information)

Moving Weather runs under 64bit server operating systems including enterprise Linux distributions (RHEL, AlmaLinux), Windows Server, etc.

INTEGRATION

Moving Weather can be integrated into your communication and processing infrastructure. In fact, it will be the heart of your meteorological network to connect you to:

- WMO Information System (WIS 1.0 and 2.0) network
- Global Telecommunication System (GTS) network
- Customers/data sources via dedicated networks (AFTN, AMHS, etc.)
- Satellite data sources (SADIS API, DWDSAT, WIFS, EUMETCast)
- Customers/data sources via VSAT (also two-way)
- Customers/data sources via World Wide Web
- Customers/data sources via Internet (SFTP, SCP, HTTP(S), E-mail, FTP(S), etc.)
- Customers/data sources connected to the telephone network
- Customers connected via fax
- Third party systems via LAN (Radar, AWS, NWP, etc.)
- Processing systems (Visualization, Pilot Briefing, etc.)



Solution examples

STANDALONE PC

Are you tight on budget but still in the need of a switching system? Moving Weather is prepared to run on as little as a standalone PC, even in an unattended mode.

Once you'll decide that you need something more, you can upgrade to a more powerful server or a server cluster. Do not worry about your data: scalability means they will go with you.

HA CLUSTER

Your data is one of the most valuable assets of your meteorological infrastructure. Moving Weather offers you two ways to assert their integrity: fault-tolerancy and high-availability.

You can safely rely on the fault-tolerant hardware with duplicated hot-plug components. And for yet more safety, a tandem of two HA servers will never let you down.

ibl weather software solutions

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IBL Software Engineering builds its reputation on 45 years of tradition in the field of Meteorological IT development. Dating from its first Automated Meteorological Message Switching Systems, the branch in Frankfurt, Germany, was established in 1988, while the branch in Bratislava, Slovakia was opened in 1997. IBL Software Engineering is employing IT specialists working exclusively in the Meteorological IT Environment with a high level of professional expertise.

IBL Software Engineering is ISO 9001:2015, ISO 27001:2013, and ISO 14001:2015 certified in the scope of development, supplying, installation, and maintenance of software for meteorological information systems. As a representative of Hydro-Meteorological Equipment Industry it is recognized by WMO and IBL's experts are participating in the number of WMO Expert Teams. IBL pays close attention to the advancements in BUFR, IWXXM, Amendment 81, GRIB3, etc. and its products fully comply to the following standards:

- WMO Manuals on Codes 306, on Global Telecommunication System 386, on Global Data Processing System 485
- ICAO Annex 3 up to Amendment 81 and ICAO Regional SIGMET Guides as of 2023
- SADIS workstation requirements 1.1 April 2021

PRODUCT PORTFOLIO

If the integration of all meteorological data processing systems is the key factor for the effective operation of your business, then with the IBL product portfolio your integration efforts are minimized, because IBL systems are designed to closely cooperate to provide the desired synergy.

No meteorological office is an island, entire of itself.

visual weather

numeric weather

aero weather

satellite weather

climate weather

online weather

recode weather

open weather

swim weather