Overview

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Executive summary

WeatherML (Weather Mark-up Language) will be the global standard protocol for weather derivatives deal description data. It will enable efficient electronic processing of weather trades, allowing compatibility between systems, reducing trading costs and operational risks.

WeatherML will provide increased credibility for the weather derivatives market by signaling to observers that the market is mature enough for standards to emerge.

WeatherML will be XML-based and designed to be broadly compatible with other XML data standards initiatives, such as FpML (Financial products Markup Language). XML-based protocols allow data to be presented in a format that incorporates business terminology and is readable by both computers and people.

A practical middleware implementation of WeatherML will be developed to enable weather derivative systems to communicate seamlessly with each other, both within and across organizations. The middleware will facilitate straight-through processing (StP) interfaces between front, middle and back office systems, as well as with exchange systems, enterprise-wide risk management systems and data warehouses.

WeatherML will be co-ordinated by Weather Risk Advisory, an independent consulting and software company specializing in weather derivatives.

WeatherML will be developed in conjunction with a group of key organizations in the global weather derivatives market.

The WeatherML Overview and other information relating to WeatherML is available from the WeatherML website, www.WeatherML.org.

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Benefits of WeatherML

WeatherML (Weather Mark-up Language) will be a standard protocol for weather derivatives deal description data.

The core purpose of WeatherML will be to reduce trading costs and operational risks associated with use of weather derivative products.

Its scope will define weather derivatives as any financial derivative instrument with a payout based on any meteorological variable(s).

WeatherML will be adopted as the industry-wide standard - the wider its adoption, the greater its value to those involved.

As with other derivative products, the complexity of managing weather derivatives requires robust and flexible systems and efficient interfacing between them.

In other markets, trading organizations have adopted a variety of approaches and this has meant incompatibility between different traders' systems and even between systems within each organization.

The development of WeatherML is a natural consequence of the weather market's growing maturity, as participants are realizing that it is time for common standards to be adopted. Standardization at this early stage will minimize changeover costs for existing participants as well as encourage the entry of new participants.

WeatherML will help manage data exchange, with particular focus on simplifying Straight through Processing (StP) and peer-to-peer interfacing between the following:

- weather derivatives trading systems (front office)
- weather derivatives risk management systems (middle office)
- weather derivatives settlements and accounting systems (back office)
- exchange systems
- proprietary weather derivatives pricing models
- enterprise-wide risk management systems
- data warehouses

Major benefits will include:

Reduced trading costs and lower operational risk

Currently, most weather derivatives-related communication is done by phone and fax, and is thus manually intensive. Trade validation is thus a manual process of data entry and comparison. WeatherML will facilitate automated trade processing, thus enhancing opportunities for cost reduction. By eliminating manual intervention, WeatherML will also help reduce data errors and the associated time wasting and trading losses. As trade volumes rise, this will become increasingly important.

Increased credibility for the weather derivatives market

WeatherML will enable the weather derivatives market to send a signal of sophistication to other financial markets and help weather derivatives become accepted as an integral part of derivative trading activities.

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More efficient system implementations

WeatherML will offer increased flexibility in systems design and interfacing, and will facilitate enhanced scalability, particularly as it will not be tied to any operating system or programming language.

Ease of data problem resolution

XML-based protocols allow data to be presented in a format that incorporates business terminology and is readable by both computers and people, facilitating much faster resolution of problems.

Simplified development of web-enabled trading systems

Use of WeatherML simplifies the development of interfaces between an organization's deal capture, processing and risk management systems and online trading screens that can be accessed by that organization's trading partners.

Extensibility

WeatherML will be extensible, allowing proprietary data to be included and avoiding the need for separate internal data formats.

Ensuring compatibility with other traded markets

Advances in technology, the prevalence of e-commerce and widespread adoption of XML-based standards necessitate the development of WeatherML to ensure that technology standards in the weather derivatives market do not fall behind those in other traded markets.

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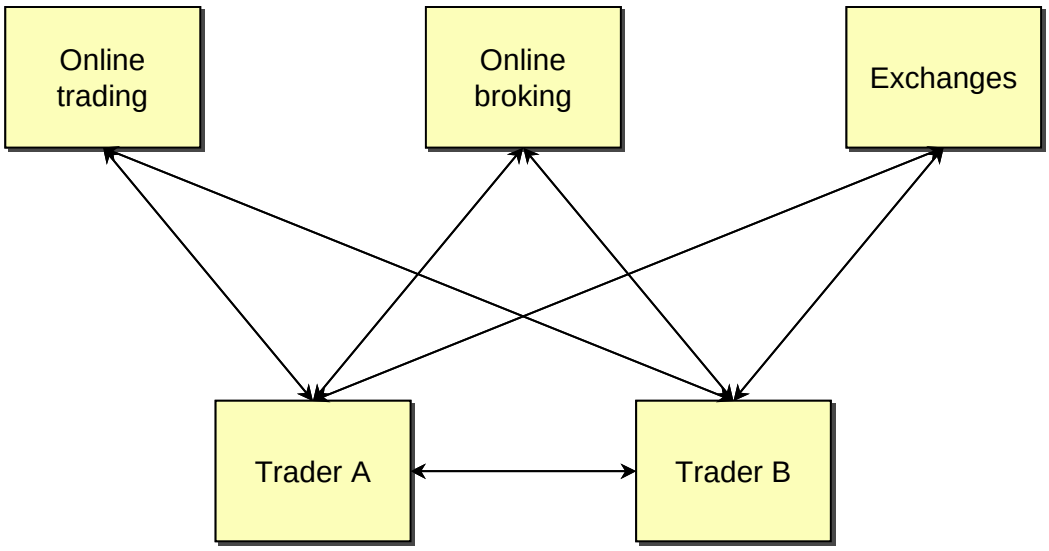
WeatherML usage scenarios

Using WeatherML for inter-organization interfacing

The example below shows uses for WeatherML in linking various organizations' systems, such as online trading, online broking and exchanges.



Online trading
By using WeatherML format to import trades carried out through an online broking system into a deal capture system, manual trade entry can be eliminated, helping reduce data errors and the associated time wasting and trading losses. When a deal is struck, the online broking system will send a WeatherML confirmation message to both counterparties, which is immediately loaded into the counterparties' deal databases for subsequent processing and analysis.

Offline over-the-counter trading
By using WeatherML, confirmation matching will be greatly simplified. Each counterparty will record the details of the trade in a deal capture system, which will automatically send a confirmation to its counterpart system in WeatherML format. Each organization's system will then check the received deal description details against those entered manually by its own trader and immediately highlight any differences.

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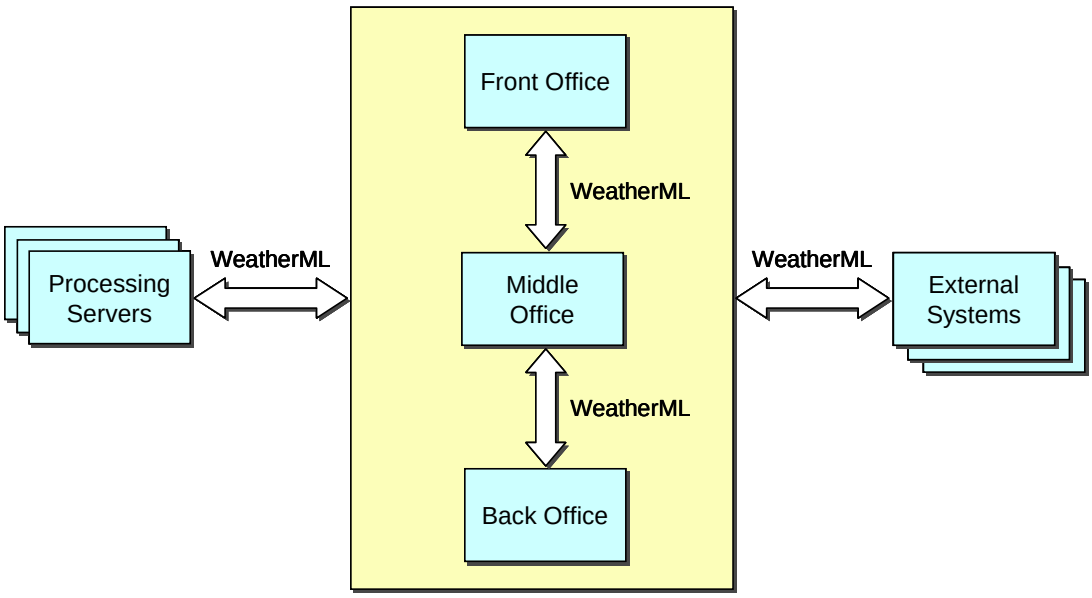
Using WeatherML to link software components

The example below shows possible uses for WeatherML within a single organization.



Integrating pricing and analytics components from a variety of sources
To retain flexibility and to enable quantitative analysts to leverage their development work, WeatherML will ensure that users are able to gain full benefit from existing tools by facilitating seamless integration of pricing and analytics components within other systems. "Processing Servers", such as Excel models or C++ programs, will carry out the analysis, receiving and sending deal description information in WeatherML format, thus facilitating use of proprietary or third party models.

Straight through Processing (StP) with componentization
By consistently passing data in WeatherML format, it will be possible to componentize your weather derivatives trading and risk management infrastructure. This will allow replacements or enhancements to trading, risk management and accounting systems (front, middle and back office respectively) to be implemented with minimal disruption to the other business areas. This will achieve the dual goals of Straight through Processing (StP) to reduce trade processing costs and componentization to reduce systems costs.

Exporting deal descriptions
By exporting trades using WeatherML, the development of interfaces to enterprise-wide risk management systems and data warehouses will be greatly simplified. Each weather derivatives system will need only one interface specification: to and from WeatherML format, rather than a different link for each connecting system. Publish and subscribe technology can then be used to ensure that data is distributed as required.

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Development of WeatherML

WeatherML will be adopted as the industry-wide standard.

The WeatherML concept will be co-ordinated by Weather Risk Advisory, an independent consulting and software company specializing in weather derivatives.

WeatherML will be developed in conjunction with a group of key organizations in the global weather derivatives market.

A WeatherML Steering committee will be created to define the standard's scope and direct its progress.

Standards and Technical sub-committees will be formed with responsibilities for business issues and technical implementation respectively. A number of special interest groups may also be created from time to time to consider specific issues.

The development timetable is shown below:

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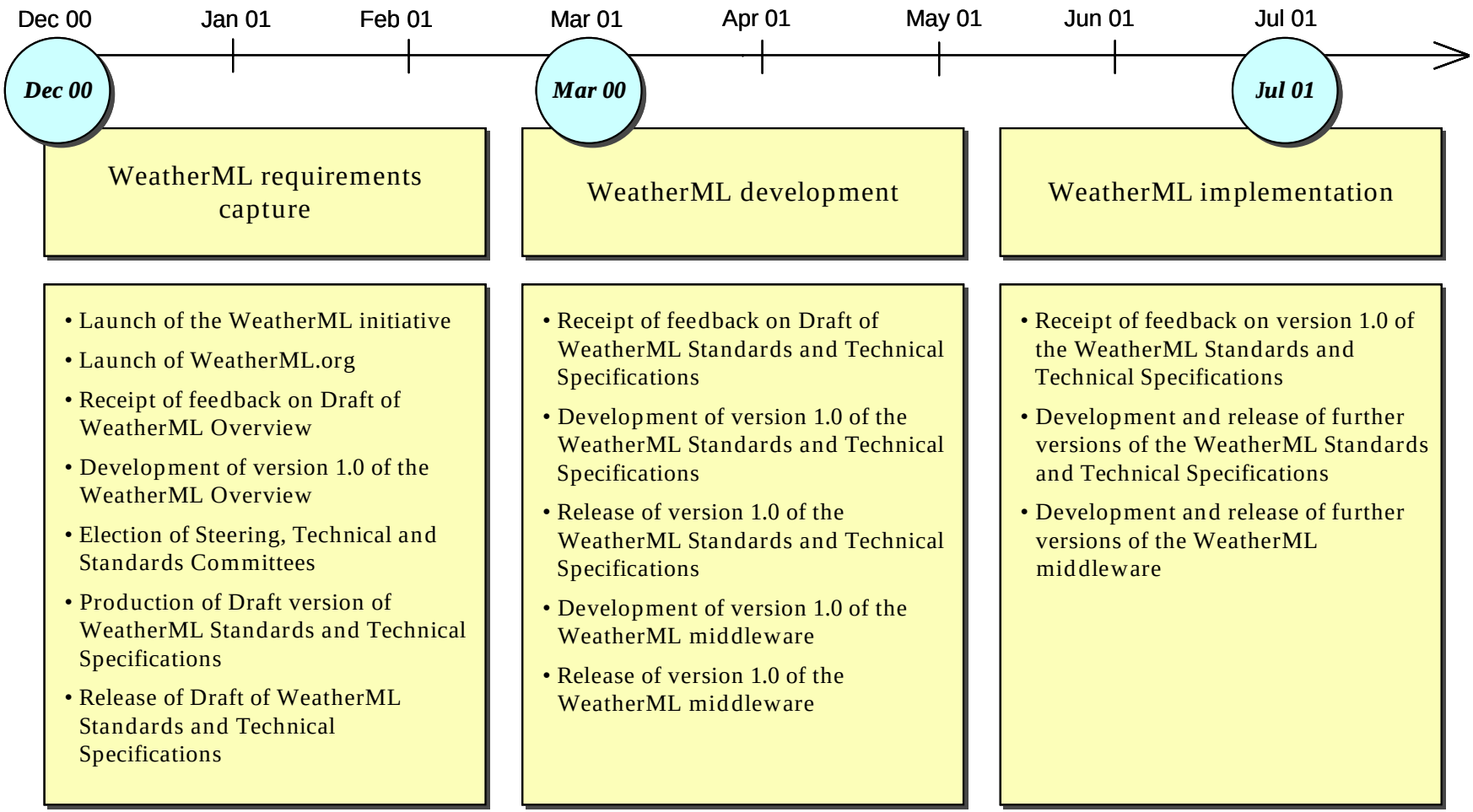

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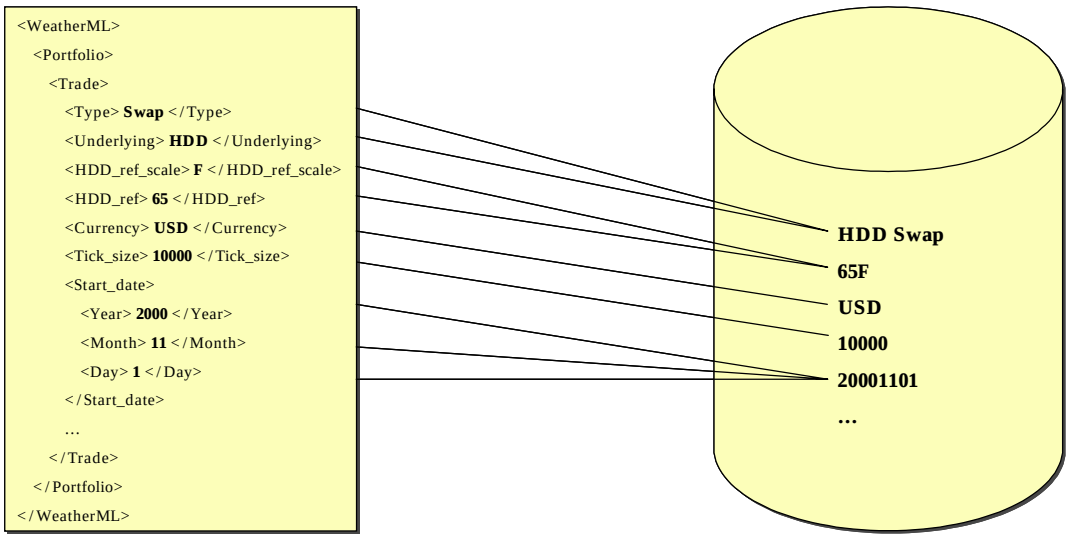
WeatherML conversion middleware

To enable two-way conversion between WeatherML and proprietary data formats, a middleware component will be developed. This will facilitate practical use of WeatherML, ensuring that the WeatherML initiative remains focused on delivering tangible solutions to key business problems.

The conversion middleware will allow all the benefits of WeatherML to be realized by facilitating the development of WeatherML-compliant interfaces. These will enable seamless communication between a range of previously incompatible weather derivatives systems, including front, middle and back office systems, Excel spreadsheets, pricing models, exchange systems, enterprise-wide risk management systems, and data warehouses.

The conversion middleware will be used to specify how data will be converted between a relational database schema or structured text file format such as CSV (comma separated values) and WeatherML. This will include defining the derivations of the data within the fields of each database record from the contents of one or more elements of the WeatherML description. A highly-simplified schematic of the conversion specification is shown below.



Following this specification, the tool will generate stand-alone Java code to perform the actual conversions. The code will be compliant with standard object technologies, such that it will act as a conversion server and will be callable from within any application.

The ease of use of the WeatherML conversion middleware will ensure that it is quick and easy to update the generated Java application whenever the proprietary data format changes. Updates of the middleware will be released as the WeatherML specification evolves to facilitate rapid implementation of additional features within each interface.

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Further information

This document and other information relating to WeatherML is available from the WeatherML website, www.WeatherML.org.

Alternatively, for further information or to discuss joining the WeatherML initiative, please contact the WeatherML Co-ordinator, Charlotte Baile of Weather Risk Advisory, at:

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