

lamaPLC Communication: XML

Extensible Markup Language (XML) is a markup language and file format for storing, transmitting, and reconstructing arbitrary data. It defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. The World Wide Web Consortium's XML 1.0 Specification of 1998 and several other related specifications—all of them free open standards—define XML.



The design goals of XML emphasize simplicity, generality, and usability across the Internet. It is a textual data format with strong support via Unicode for different human languages. Although the design of XML focuses on documents, the language is widely used for the representation of arbitrary data structures, such as those used in web services.

Several schema systems exist to aid in the definition of XML-based languages, while programmers have developed many application programming interfaces (APIs) to aid the processing of XML data.

Applications

XML has come into common use for the interchange of data over the Internet. Hundreds of document formats using XML syntax have been developed, including RSS, Atom, Office Open XML, OpenDocument, SVG, COLLADA, and XHTML. XML also provides the base language for communication protocols such as SOAP and XMPP. It is one of the message exchange formats used in the Asynchronous JavaScript and XML (AJAX) programming technique.

Many industry data standards, such as Health Level 7, OpenTravel Alliance, FpML, MISMO, and National Information Exchange Model are based on XML and the rich features of the XML schema specification. In publishing, Darwin Information Typing Architecture is an XML industry data standard. XML is used extensively to underpin various publishing formats.

One of the applications of XML is in the transfer of Operational meteorology (OPMET) information based on IWXXM standards.

Example

```
<?xml version="1.0" encoding="UTF-8"?>
<response xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" version="1.2"
xsi:noNamespaceSchemaLocation="http://www.aviationweather.gov/static/adds/schema/metar1_2.xsd">
  <request_index>8595399</request_index>
  <data_source name="metars" />
  <request type="retrieve" />
  <errors />
  <warnings />
  <time_taken_ms>4</time_taken_ms>
```

```
<data num_results="2">
  <METAR>
    <station_id>KDEN</station_id>
    <flight_category>VFR</flight_category>
  </METAR>
  <METAR>
    <station_id>KCF0</station_id>
    <flight_category>VFR</flight_category>
  </METAR>
</data>
</response>
```

Sources

Wikipedia ([here](#))

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