

The W3stat project in Germany

(Extract from 'Web-forms for Intrastat, Eurostat, March 2000)

Overview

The W3stat service provided by the Federal Statistical Office (*Statistisches Bundesamt*) enables companies to submit Intrastat declarations via the Internet. System functions and a description are accessible on the web at <http://w3stat.statistik-bund.de/>.

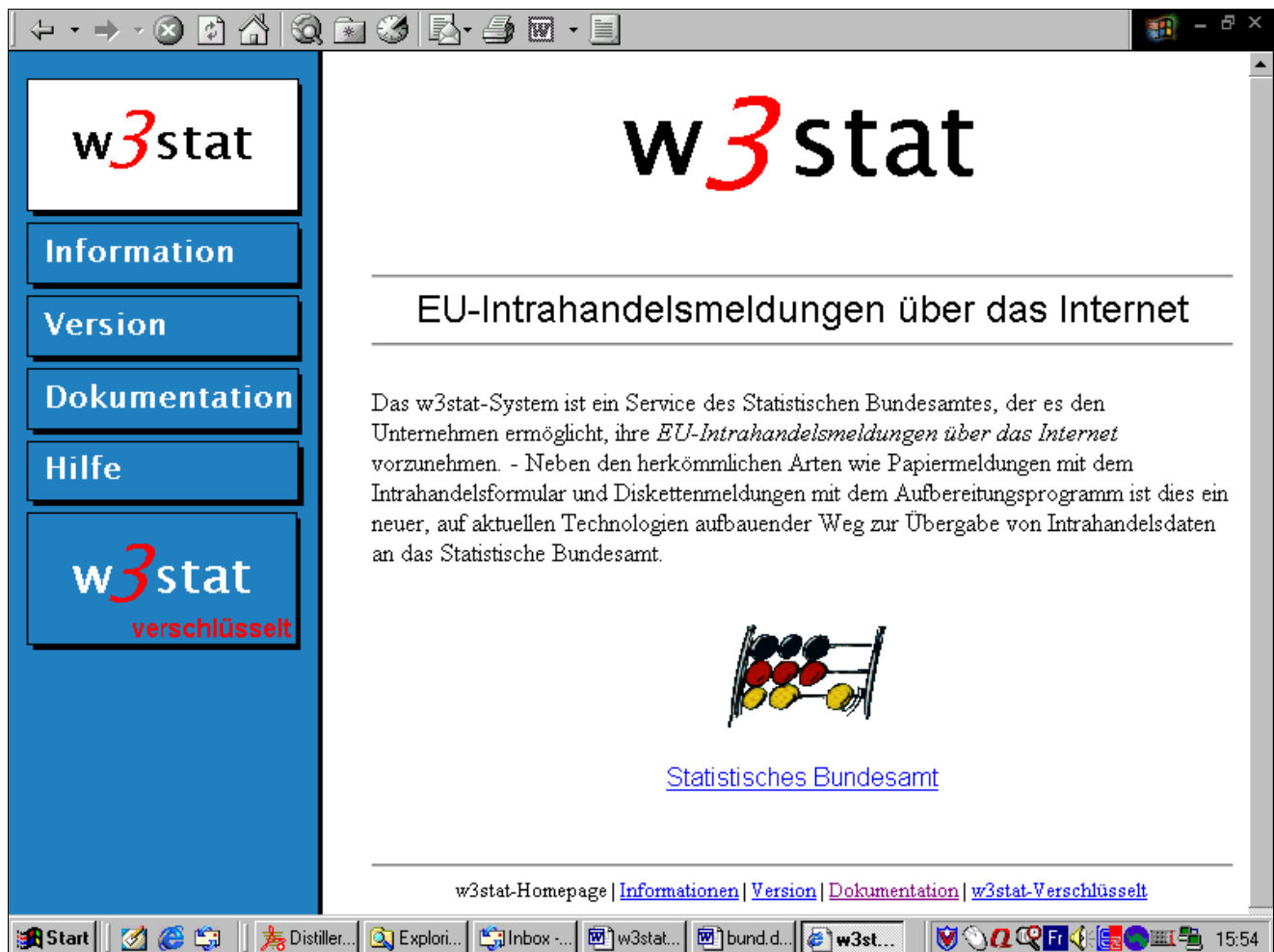


Figure 6: W3stat homepage

Once all the planned functions have come on stream, W3stat will offer providers of statistical information (PSIs) the following options for transmitting their returns to the Federal Statistical Office:

- on-line declarations with direct browser-level input of data onto forms,
- transmission of externally prepared declaration files in all permissible formats,
- transmission of data generated using a new W3stat data-capture system.

- W3stat is being introduced in two phases:
- initially, only the on-line declarations facility and the option of transmitting externally processed data will be available,
- in the second phase, the new data-capture and transmission system will be made available.

Phase I of the project

In the first phase, a pilot version of the server was brought into operation at the beginning of 1999. Since mid-1999, a production version has been available for application testing with pilot users. This initial version of the W3stat web-server already features the following functions:

- on-line documentation on Intrastat and CBS-IRIS,
- guest access enabling users to try out the system,
- help functions for users (FAQ and support),
- user registration,
- downloading of CBS-IRIS,
- on-line forms for direct submission of returns,
- transmission of CBS-IRIS-generated files,
- data encryption.

During pilot testing, the transmission procedure was tried out with selected companies in parallel with the existing transmission system. Initially, some 60 companies took part. Since the reporting month of January 2000, the filing of parallel returns on physical data media has been dispensed with.

Phase II

In the second phase, these capabilities will be supplemented by a comprehensive data-capture and transmission system whose functions are comparable with those of the CBS-IRIS interactive data-capture system used in Germany. This software is currently at the development stage and is scheduled for completion by mid-2000. The aim is for all components to come fully on stream as from the reporting year 2001. The data-capture software for W3stat will be completely Java-based and will also enable declarations to be prepared off-line.

In addition to the client-side functions supporting data input, the W3stat system also includes a full range of data-transmission security features both at the PSI end and at the Federal Statistical Office. All PSI data are encrypted upon transmission, and sender authentication is guaranteed in each case. Data are accepted into the Federal Statistical Office's in-house network under secure conditions and are protected from unauthorised access right the way through to the processing stage.

The W3stat system ensures that W3stat returns are integrated into the automated processing of intra-Community trade data (ASI system) and thus makes for rapid and efficient processing of return data.

W3stat functions

PSI registration and authentication

It is essential that the Federal Statistical Office know for certain the identity of the person submitting a declaration. Every information provider therefore has to be registered before he or she can use

W3stat. The sender of a declaration can then be authenticated. Pending sufficiently widespread use of the Internet's future standard for authentication by user certificates, user names and passwords are being employed for now as a means of identifying W3stat users.

Users register on-line via the Internet using a special registration form. When a PSI initiates a registration inquiry via an encrypted W3stat page and this is accepted by the Federal Statistical Office, he or she is sent a letter containing an anonymous user name with password. These have to be entered for each W3stat session and are the sole means of identifying the PSI up to the point at which the data are accepted into the processing system.

On-line returns

The mechanism for filing returns on-line is geared to PSIs who have to make only a few declarations per reporting period. Separate forms are provided for arrivals and dispatches, and the layout is very similar to that of the paper forms.

For each movement of goods, a form has to be completed and submitted. When preparing the next declaration in the same session, the user can draw on the data in the previous form. For the future, it is planned to provide a standard data record. Straightforward credibility checks are carried out.

Transmission of declaration files

If a PSI prepares a declaration on diskettes using CBS-IRIS (maybe having downloaded this program from the W3stat site), the declaration files thus prepared can be transmitted to the Federal Statistical Office via W3stat. However, all other proprietary formats which are permissible for returns to the Federal Statistical Office are also supported, as are standard data compression program formats (such as .zip). In Phase II, it is planned to extend coverage to include CSV format, CUSCDEC/INSTAT and XML.

A straightforward file dialogue facility is provided which enables the user to select the declaration file on his or her local computer. File transmission can subsequently be activated. From the W3stat server, the files are passed through the firewall to the ASI system, where the declarations are accepted and then decrypted.

The on-line data and the data which are later acquired by the processing program are fitted into the current mechanism (pre-checking by the specialist department). The input protocols on the data submitted via W3stat are made available in the W3stat administration database.

Administration of PSIs and declarations

The W3stat administration database (Verwaltungsdatenbank - VDB) administers PSIs who use the W3stat service. It stores all the necessary information relating to registration inquiries from approved PSIs and is a means of identifying these information providers. PSIs can access the database and change entries such as address and contact person, where necessary. For the purpose of processing registration inquiries, there is a link to the intra-Community trade register, and a letter of confirmation is drawn up assigning a user name and password to an approved PSI.

After the W3stat server has received a valid PSI declaration (anonymous user name), protocol data such as the time of filing (not the content) are entered in the W3stat administration database (VDB). In this database, the processing status of a declaration can be tracked from computerised storage of the protocol data in the W3stat-VDB right the way through to data input into the ASI system. If the PSI so wishes, an e-mail can be automatically generated confirming that the return is being processed.

W3stat data-capture system

This component is designed to enable information providers to collect the reportable data either on-line or off-line and transmit them to the Federal Statistical Office. It offers the following functions:

- off-line input and data storage comparable with the CBS-IRIS program used hitherto,
- user-friendly Windows interface with on-line help and supporting user functions integrated into Web access, as well as access to on-line documentation,
- complete administration of updates and versions via the Federal Statistical Office's W3stat web-server and straightforward installation from the Net,
- import functions for standard data formats such as CSV, CUSDEC/INSTAT and other data formats used in Germany,
- credibility checks for off-line and on-line data input, link-up to administration database (VDB),
- compression using standard compression algorithms, and cumulation of individual declarations.

W3stat technology

System design

The W3stat architecture is a distributed system spanning three levels, each featuring different hardware and software components:

- general data input server in the in-house network of the Federal Statistical Office serving as an interface to the internal processing system (ADES) and to the administration database (VDB),
- web-server in the 'demilitarised zone' of the Federal Statistical Office for Intrastat data input (W3stat),
- user's PC workstation with web-browser and Java components installed.

Technologies used

The implementation of W3stat, only uses standard Internet technology. The aim is to ensure that the system is cost-efficient and future-proof, while minimising the technical requirements at the user's end.

The basic technologies are:

- HTTP using standard browsers (Netscape Navigator, Microsoft Internet Explorer),
 - Java to create the client components,
- standard encoding/encryption techniques.