

# webODV – a tool for the online analysis of marine data

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## webODV – Ocean Data View online

Ocean Data View (ODV)<sup>1</sup> is a widely used software package for the analysis, exploration and visualization of oceanographic and other environmental data. It plays a fundamental role in the SeaDataNet (SDN) community and is heavily used for data file and parameter aggregation as well as for data quality control by regional data coordinators. In the framework of the SeaDataCloud (SDC) project an online version of the ODV software is being developed called webODV. The online webODV tool will provide typical ODV functionality as a collection of modular web services. In the background, the modular web services make use of the full power of ODV running on the server side. The basic concept is to provide a user-friendly Browser interface which communicates with ODV on the server. On the server we run a special version of ODV that is equipped with a secure Websocket server and allows bi-directional communication with the client via encrypted Websocket messages.

## webODV architecture

webODV will be implemented on EUDAT cloud infrastructure dedicated to SDC, and it is planned to develop a so called Virtual Research Environment (VRE), where users can work online on marine data. webODV will represent a major part of this VRE. As shown in Fig. 1 the main concept is to have a state of the art Browser interface offering different modular services, like data extraction, quality control and visualisation. These services communicate via the fast (and secure) Websocket protocol with the ODV instances on the server, which are responsible for the actual data processing.

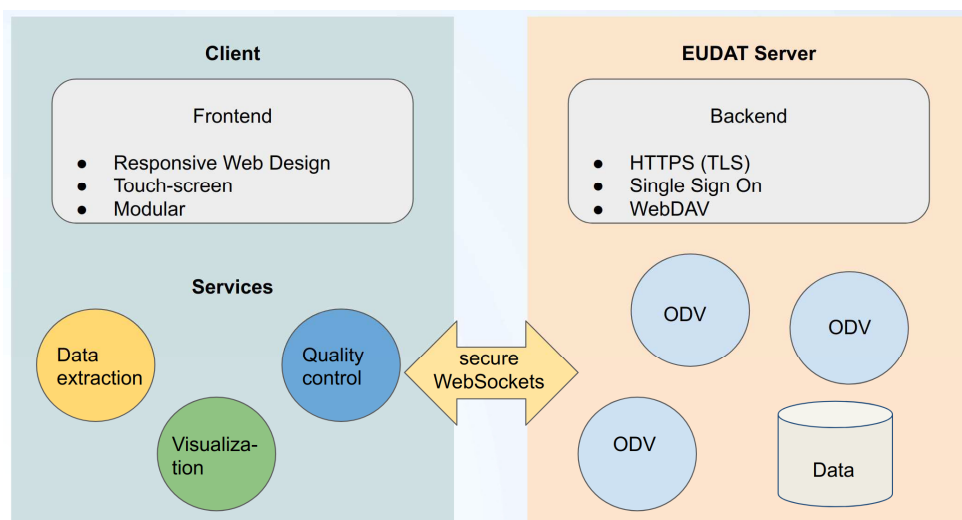


Figure 1: Concept

<sup>1</sup>R. Schlitzer, Interactive analysis and visualization of geoscience data with ocean data view, Computers & geosciences 28 (2002) 1211–1218.

## webODV online quality control

As a core webODV service online data **quality control** of marine data will be implemented in the SDC infrastructure. Figure 2 shows a prototype of the online quality control service.

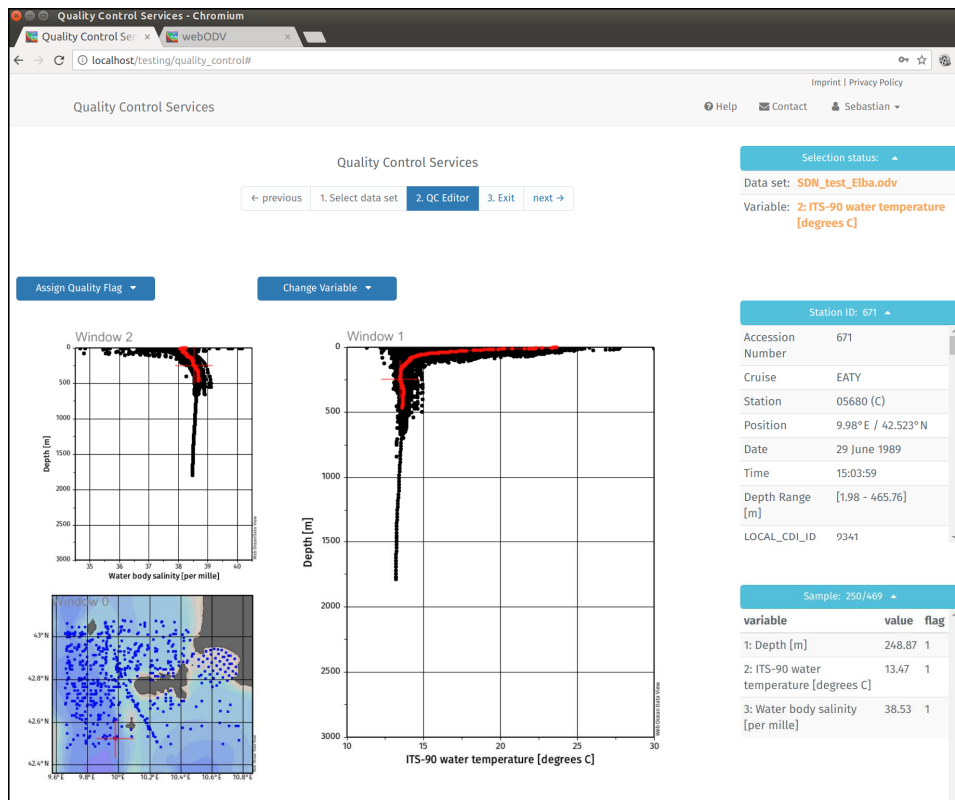


Figure 2: Quality Control service

Data quality control is a fundamental requirement of any data system. Within SDC regional experts perform quality control on ocean profile data in regular intervals using the desktop ODV software. Here we present the first webODV prototype for online quality control. Users are able to perform visual quality control by inspecting scatterplots of specific variables like temperature and/or salinity. By clicking on single samples within a scatterplot, information about that sample and measurement station are provided. Quality control experts can zoom into the plots, flag single samples, entire stations, all stations visible in the zoom window or all samples in the collection.

## webODV other services

Another important webODV service developed for SDC is data extraction, allowing selection by cruise names, geographical domain as well as time windows. An operational example of a webODV data extraction service is available at <https://webodv.awi.de>.

Other planned webODV services comprise data import, data aggregation as well as data visualisation.