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Author(s): Karel Fliegel, Stanislav Vítek, Czech Technical
University in Prague, Faculty of Electrical Engineering, Multimedia
Technology Group
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QUALINET Multimedia Databases Online v3.0

Introduction

A key for current and future developments in QoE resides in a rich and internationally recognized database of content of different sorts, and to share such a database with the scientific community at large. Thus, one of the main interests of the WG4 (Databases and validation) is to create such databases, and take the necessary steps so as to make them accessible to all researchers.

WG4 continuously updates a list of multimedia databases and summarizes their basic description based on literature search and on the feedback from the Qualinet members. The number of databases in the list ("QUALINET Multimedia Databases v5.5" and "List of QUALINET Multimedia Databases v5.5") steadily increases (October 2014, 200 multimedia databases from which 83 are owned by Qualinet partners or were created under Liaison with Qualinet).

To share the databases efficiently with other researchers a "QUALINET Multimedia Databases Online" platform has been introduced. The "QUALINET Multimedia Databases Online" is abbreviated to "Qualinet Databases" in this document. This website (http://dbq.multimediatech.cz/) is used as Qualinet's main resource for sharing of the datasets among Qualinet members and scientific community. "Qualinet Databases" platform is intended to provide broader functionality that other known similar solution. The "Qualinet Databases" platform handles information of the multimedia content. Subjective data are available for selected datasets, such as MOS or eye-tracking. The database entries are accompanied with a detailed description of the datasets including scientific references.

The thoughts of the WG4 about the main principles and functionality of the "Qualinet Databases" were introduced in the previous versions of this document. The implementation of the system and required functionality are directed by the conclusions drawn at the Qualinet meetings and thereafter summarized in the previous versions of this document. In this version of the document current functionality of the system is presented. The "Qualinet Databases" has been already released for the general scientific community. However, the system is under continuous development and implementation of various tools is expected in the future, even after the official end of Qualinet action. Comments or ideas on the required functionality and features are appreciated. These comments will be taken into account for the new versions of the "Qualinet Databases" platform.

The current functionality of the "Qualinet Databases" is based on the previous version of the document "QUALINET Multimedia Databases Online v2.5" presented at the Seventh Qualinet general meeting in Berlin (March 2014). The purpose of this document is to describe the current functionality and features of the "Qualinet Databases" and it is intended as simplified user's guide for the system. The document also summarizes plans for the features to be implemented in the next version of the system.

Comments or questions regarding the "Qualinet Databases" should be directed to Karel Fliegel (fliegek@fel.cvut.cz), Qualinet WG4 deputy leader.

Contents

1 Current functionality of the "Qualinet Databases"

The basic functionality of the "Qualinet Databases" lies in idea that registered users (Qualinet members and approved users from the scientific community) have access through the simple web portal to the list of multimedia databases and based on their user rights they are allowed to browse information about the particular database and eventually download the actual multimedia content.
Selected users, "Database Owners" in particular, have rights to upload or edit their records in the list of databases. Selected multimedia databases "Publicly Available" are accessible also to the registered researchers outside Qualinet. Only administrators (WG4 leader and deputy leaders) have right to delete records in the database. "Qualinet Databases" does not contain the actual multimedia content but only the access information with provided links to the dataset files saved at the server of the "Database Owner". However "Database Owner" can request the administrator of "Qualinet Databases" to provide FTP hosting of the actual multimedia content. In the following paragraphs the current functionality and features of the "Qualinet Databases" platform are described in more details.

1.1 Hosting of the "Qualinet Databases"

The technical requirements on the server in the short-term perspective are very basic, since the most of the multimedia content is not hosted at the same machine but on the side of the "Database Owner". Increasing number of requests on actual hosting/mirroring of multimedia content can be expected and the technical requirements will be increasing.
Currently the "Qualinet Databases" is hosted at the Czech Technical University in Prague, where the development and maintenance is being performed "Qualinet Databases" by the team around the WG4 deputy leader responsible for databases. The "Qualinet Databases" platform is designed so that it can be migrated from one host server to another also counting with necessary backup.

1.2 Development and maintenance of the SW/HW solution

The development and maintenance of the SW/HW solution is partially supported from the national COST project LD12018 "Modeling and verification of methods for Quality-of-Experience assessment in multimedia systems (MOVERIQ)", Prof. Miloš Klíma, Czech Technical University in Prague (CTU in Prague), Faculty of Electrical Engineering (FEE). The HW is located in one of the server rooms of the CTU in Prague, FEE. The "Qualinet Databases" will be maintained by the CTU in Prague after the official end of COST IC1003 Action QUALINET.

1.3 Access to the "Qualinet Databases"

There is a simple interface accessible to registered users with valid username and password.
- The "Qualinet Databases" platform
  http://dbq.multimediatech.cz/
- Simple wiki page is used to inform about the implementation process
  http://dbq-wiki.multimediatech.cz/
- "Qualinet Databases" is linked to Qualinet web portal (http://www.qualinet.eu/) within a section "Qualinet Databases" in the main menu

1.4 First login

A simple web interface is used to access the "Qualinet Databases". The "Qualinet Databases" logo, see Fig. 1, follows well accepted and already recognized Qualinet logo. The design of the web portal is similar to the one presented at the Qualinet website www.qualinet.eu. The "Qualinet Databases" logo uses the same font (Bradley Hand ITC) and the same color scheme as can be seen at the Qualinet website.

Fig. 1 Qualinet Databases - Logo

Each user of the "Qualinet Databases" can access the database only after entering his/her own username and password at the homepage, see Fig. 2. The potential user of "Qualinet Databases" should create his/her own account providing all the registration data (e.g. Prefix*, First name*, Middle Initial, Last/Family Name*, User Name*, Password*, Confirm Password*, Institution*, New Institution, Qualinet partner*, Address*, City*, Country*, E-mail*, Phone number) clicking "If you do not have an account, please register here" link at the homepage of the website, see Fig. 3. The administrator is notified and requested for approval of the pending user registration. Notification emails are sent to the newly registered user and administrator.
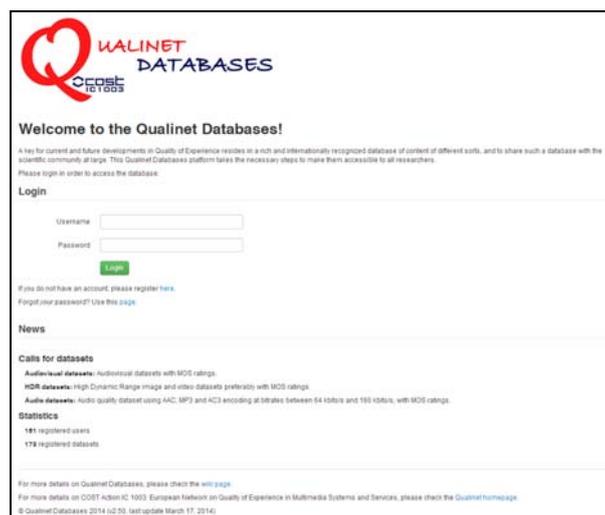
Fig. 2 Qualinet Databases - Homepage/Login

Generally all the Qualinet members have right to browse the databases and enter new items. The items are editable only by the user who entered the database "Database Owner"or by administrator. The items in the database can be deleted upon request and only by the administrator.

There is a News section at the "Qualinet Databases" Homepage with the following content:
- Calls for datasets (requests from the registered users for new datasets)
- Statistics with current number of registered users and datasets

Fig. 3 Qualinet Databases - New user

1.5 Browsing the databases

The "Qualinet Databases" list is accessible to all registered users after entering valid login data. Depending on the level of the rights assigned to the particular account a user is able to browse the list of the databases with description (all registered users) and has access also to the actual multimedia content (generally all Qualinet members). This provides the user with a powerful tool to find the multimedia database that best suits his/her needs.

Fig. 4 Qualinet Databases - List of Databases

In the list of databases, see Fig. 4, all the databases are shown. User can select visible fields for the list in the User Settings the (Qualinet Partner, Database name, Description, Institution, Owner, Public, Access, References, Type, MOS, Other, HRC, Resolution, Method, Ratings, SRC, Total), see Fig. 5. Fulltext search within the selected visible fields is available. To enter the search queries a search field above the list of databases is used. Also a general fulltext search is available in the black ribbon at the top of the page.

In the current version (v3.0, October 2014) of the "Qualinet Databases" users can sort databases alphabetically based on the visible fields or use the search field as described above.

The list of databases allows:

- Open a card with details on particular database record (accessible to all users)
- Edit database record (accessible to the database owners and administrators)
- Delete database record (accessible only to administrators)

- Request deletion of database record (accessible to the database owners)
- Request assignment as the database owner (accessible to all users)
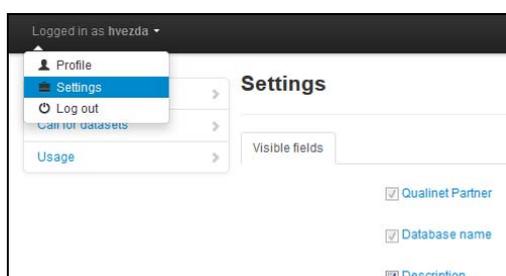

Fig. 5 Qualinet Databases - User Settings (Visible fields)

1.6 Editing the databases

Current offline version of the list is available in "List of QUALINET Multimedia Databases v5.0" spreadsheet and QUALINET Multimedia Databases v5.0 document. The list of "Qualinet Databases" is editable only by users with enough rights assigned to their accounts. Generally the record in the database (e.g. description, link update) can be edited by the user who submitted the database "Database Owner" or by the administrator, see Fig. 6. Other users have only the right to browse the database. The multimedia database in "Qualinet Databases" can be deleted only by the administrator (WG4 leader, deputies). The deletion can be requested also by the user but must be followed by the approval from administrator.
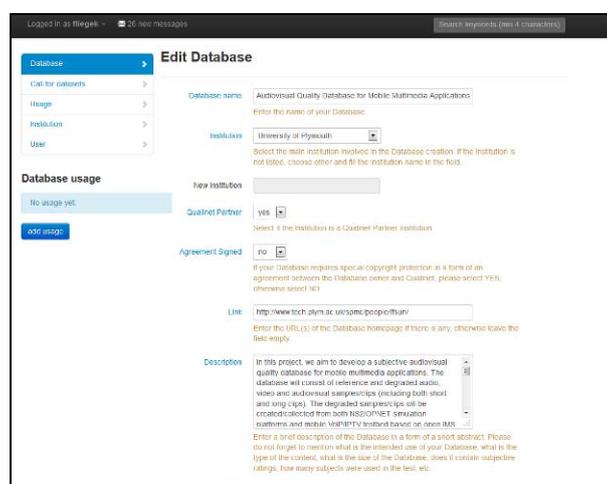

Fig. 6 Qualinet Databases - Edit Database

1.7 New database submission

The new multimedia database can be submitted only by the registered user, see Fig. 7. After successful login the user can use the submission form to submit new multimedia database into the "Qualinet Databases". The requested input information follows the fields defined in the "List of QUALINET Multimedia Databases v3.5" spreadsheet (e.g. Database, Institution, Qualinet Partner, Agreement Signed, Link, Description, Access, Citation, Copyright, Contacts, References, Type, MOS, Other, Total Ims., SRC, HRC, Resolution, Method, Ratings). The link to the actual multimedia data and subjective data (e.g. MOS, eye-tracking) can be provided or hosting within the "Qualinet Databases" FTP can be requested.

After submission the administrator will get a notice through email that the new database was submitted and that its approval is pending. The administrator will check the completeness of the

submission. If the submission is approved by the administrator, it will appear in the list of databases and it will become visible to the "Qualinet Databases" users with sufficient rights. If the submission is incomplete, the administrator will contact the "Database Owner" to assist him/her. This will be the case especially if the "Agreement between the Database Owner and QUALINET" is requested. In the case the "Database Owner" requires hosting of the multimedia data at the "Qualinet Databases" server, the administrator is notified and will assist with the data transfer, preferably via FTP.
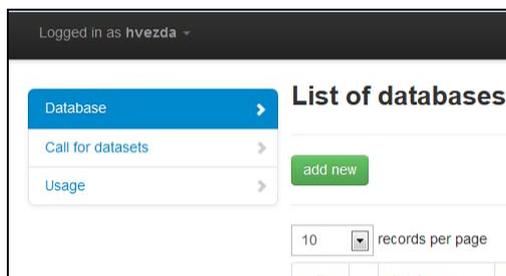

Fig. 7 Qualinet Databases - New database submission (add new)

1.8 Upload of Supplementary Files

For each entry in the database, a supplementary file can be uploaded by the "Database Owner". The supplementary file upload can be used to include for example the paper where the dataset is described. The supplementary files can be uploaded only by the "Administrator" or "Database Owner".
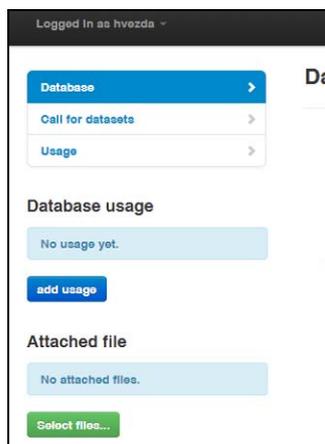

Fig. 8 Qualinet Databases – Supplementary file upload

1.9 Database Usage

For each entry in the database it is possible to insert information about the use of the database, for instance in a specific paper, see Fig. 9. This information can be entered by the registered user. Basis for the current usage records was derived mainly using Scopus search engine. For future version bulk import of references for usage tracking with BibTeX filter is planned.
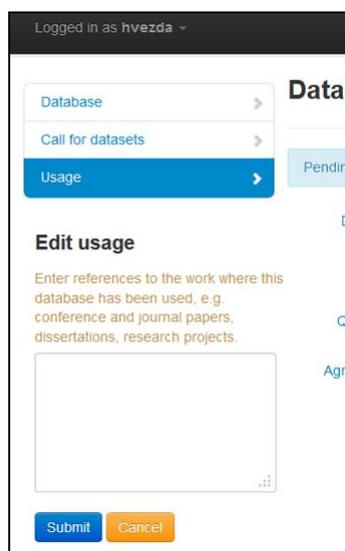
Fig. 9 Qualinet Databases - Database usage

1.10 Call for Datasets

If there is some particular database content missing, registered user can enter a request for the new database, see Fig. 10. Each registered user can insert request for a new database with brief description of the call "Title", "Short description", "User", "Date". Only the user who created the entry or the administrator has the right to edit or delete the call. The entered call for datasets will appear in the News section of the Homepage.
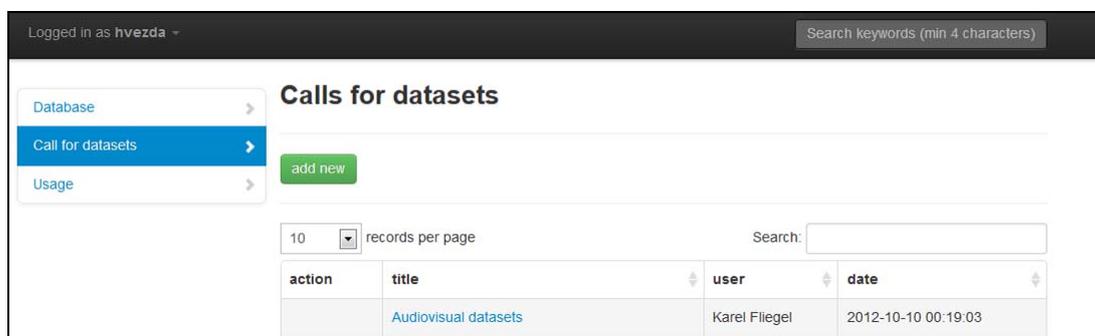

Fig. 10 Qualinet Databases - Database usage

1.11 Ask for ownership

Selected users, called Database Owners, have rights to upload or edit their records in the list of databases. Database Owners are usually responsible for the creation and maintenance of multimedia databases at their institutions. If you want to become a Database Owner of this database please click on Ask for ownership button, see Fig. 11. Your request will be sent to the administrator for approval.

Fig. 11 Qualinet Databases - Ask for ownership

2 Issues to be solved and further steps

This document presents an overview of "Qualinet Databases" online platform functionality and features. The system is under continuous development. The system will be maintained after the official end of COST IC1003 Action QUALINET. Comments and requests are welcome.

- The "Qualinet Databases" platform
  http://dbq.multimediatech.cz/
- Simple wiki page is used to inform about the implementation process
  http://dbq-wiki.multimediatech.cz/
- "Qualinet Databases" is linked to Qualinet web portal (http://www.qualinet.eu/) within a section "Qualinet Databases" in the main menu
- Planned features for the next version:
  - Advanced export to MS Excel compatible spreadsheet
  - Bulk import of references for usage tracking with BibTeX filter

3 References

QUALINET Multimedia Databases v5.5
List of QUALINET Multimedia Databases v5.5