

AXMEDIS

Automated Production of Cross Media
Content for Multichannel Distribution



AXMEDIS P2P TOOLS USER MANUAL: AXEPTOOL AND AXMEDIA

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- You can contribute to the improvement of AXMEDIS documents and specification by sending the contribution to P. Nesi at nesi@dsi.unifi.it. You can attend AXMEDIS meetings that are open to public, for additional information see WWW.AXMEDIS.org or contact P. Nesi at nesi@dsi.unifi.it

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INTRODUCTION

Dear AXMEDIS user,

Welcome to *AXMEDIS P2P Tools User Manual*, the official training workbook for the programs that has as main aim to share, distribute and download AXMEDIS rich and interactive content.

With this guide, the AXMEDIS team is hoping to help users to share, distribute and download easily AMEDIS objects to show how simple and powerful these tool are.

AXMEDIS is a very complex and complete world and it is very difficult to cover all the aspects in only one manual.

Remember to not hesitate to contact the AXMEDIS team if you need additional information or to point out mistakes in this manual. Also don't hesitate to visit the AXMEDIS portal where you can find many other information regarding the AXMEDIS technology, with many real examples and objects.

OVERVIEW

This deliverable aim is to describe the User Manuals of AXMEDIS P2P tools.

AXMEDIS P2P

AXMEDIS P2P: AXEPTOOL AND AXMEDIA

In AXMEDIS, the P2P technology is based on BitTorrent technology and it used for distributing and sharing AXMEDIS Content among:

- B2B partners such as content: producers, integrators, distributors, publishers, archives, etc.; realized with **AXEPTool** P2P B2B Tool
- final users of a content distributor, realized with **AXMEDIA** tool.

Many P2P network can be realized for P2P distribution to final user. Each of them refer to an AXMEDIS Query Support Server and to an AXMEDIS BitTorrent? Tracker.

MAIN FUNCTIONALITIES

The general features of any AXMEDIS P2P tool are:

- legal usage of P2P content distribution;
- guarantee of consistency between the exposed metadata and the downloaded content;
- verification and certification of content distribution and sharing;
- monitoring and controlling downloads and uploads in the P2P network for B2B and B2C.

RELATIONSHIP WITH OTHER TOOLS

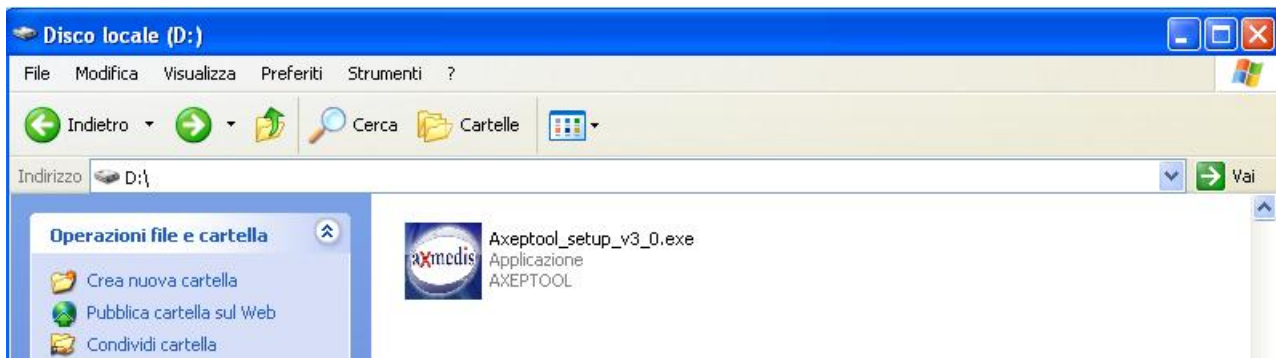
None

DETAILED DESCRIPTION OF THE FUNCTIONALITIES AND SCREENSHOTS

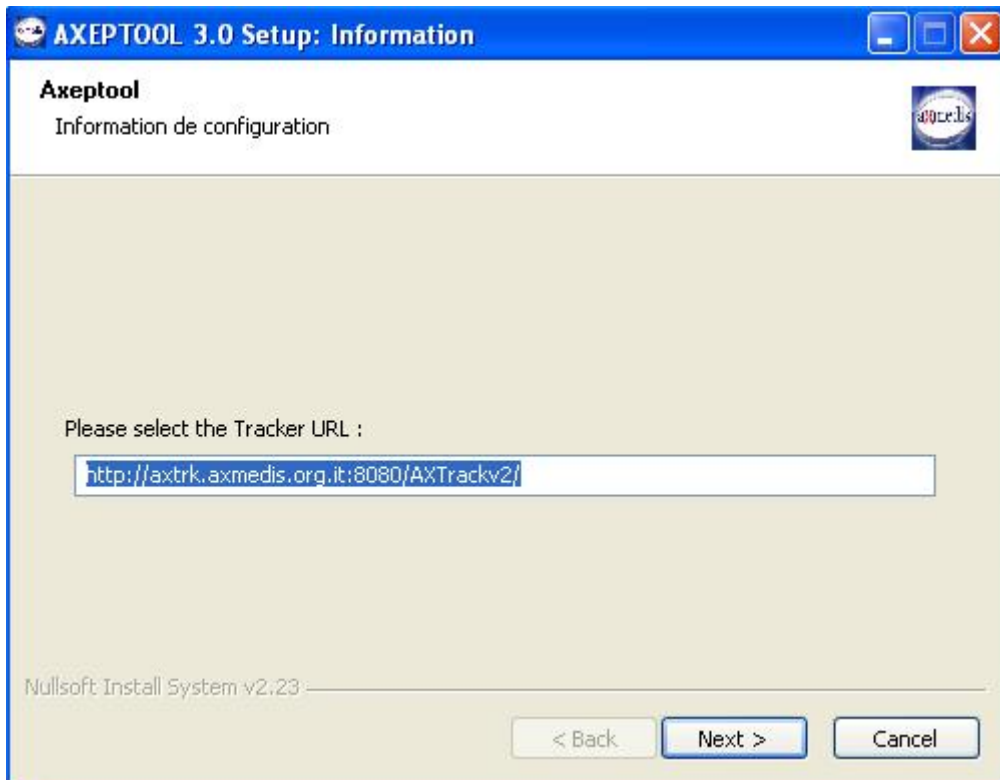
The AXEPTool and AXMEDIA can be installed on a wide variety of systems including most Unix and Linux based systems and Windows. Unix users must build from the source and install by hand. For windows users, an installation program has been developed.

The installation procedure is straightforward, when you double click on the installer executable, you'll be greeted with a wizard, providing you a step-by-step installation procedure. Both installers for AXEPTool and AXMEDIA work exactly in the same way. So these instructions apply for both products.

Double-click on the AXEPTool installer and proceed with the installation:



You can change the default installation path if you want, but you don't have to modify the default Tracker URL:



Once installed, you can customize which folders to use for the objects you want to publish or download by opening with your preferred editor the WinAXEPTool.conf file. You can find it in the AXEPTool installation directory.

The following is an example of configuration file followed by the explanation of each parameter:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<AXEPTool>
  <downloadDirectory path="C:\Programmi\AXEPTOOL\Download"/>
  <homePage url="http://www.axmedis.org"/>
  <catalogueURL url="http://axtrk.axmedis.org:8080/AXTrackv2/do/AXEPStore"/>
  <TrackerURL url="http://axtrk.axmedis.org:8080/AXTrackv2"/>
  <portLocalHTTPServer port="7780"/>
  <publishDirectory path="C:\Programmi\AXEPTOOL\Seeds"/>
  <urlThisApplication url="150.217.15.245"/>
  <queryServiceURL
url="http://axp2pqs.axmedis.org:8080/P2PQueryServerUploader/UploadManager"/>
  <searchURL
url="http://axp2pqs.axmedis.org:8080/P2PQueryWebUserInterface/index.jsp"/>
  <tcpPort port="6881"/>
  <udpPort port="6881"/>
  <shortLog value="true"/>
  <dhtEnable value="false"/>
  <maxConnectionsByTransfert value="30"/>
  <maxConnectionsTotal value="150"/>
  <intervalAnnounce value="240"/>
  <maxUploads value="50"/>
  <maxUploadsSeeding value="50"/>
  <maxActiveTorrents value="50"/>
</AXEPTool>
```



```
<maxDownloads value="10" />  
</AXEPTool>
```

If you want to change the Download Directory (you can do this either from the AXEPTool Settings) you have to edit the line:

```
<downloadDirectory path="D:\axp2pobj"/>
```

Note that if you choose an non existent folder the AXEPTool will use a default directory for downloaded objects:

```
%your installation path%\AXEPTOOL\Download\
```

and a default directory for published objects:

```
%your installation path%\AXEPTOOL\Seeds\
```

Then you have to change this line in the WinAXEPTool.conf:

```
<urlAXEPTool url="http://lotar.dsi.unifi.it"/>
```

replacing the URL there with your own AXEPTool URL (public IP). Once done you can save the updated configuration file and start AXEPTool.

maxConnectionsByTransfert, indicates the max number of connection available for each download;

maxConnectionsTotal, indicates the max number of total connections;

intervalAnnounce, indicates the announce period (number of seconds that have to pass when a tool contact the tracker);

maxUploads, indicates the max number of connection in upload;

maxUploadsSeeding, indicates the max number of connection in upload that are in seeding status;

maxActiveTorrents, indicates the max number of active torrent;

maxDownloads, indicates the max number of downloads;

dhtEnable, (can be *true* or *false*) possibility to activate the DHT support or not (Distributed Hash Table);

udpPort: number of the UDP port;

short Log: (can be *true* or *false*) support to verbose log (if *false*).

If you have a firewall installed on your PC, remember to allow this application in the firewall rules. If you have Windows Firewall enabled, you have to allow the Java Virtual Machine in the Firewall Exceptions. Confirm to unlock it:



Note that AXEPTool uses BitTorrent protocol to establish communications between the peers.

BitTorrent by default uses ports in the range of 6881-6889. These are all TCP ports. The client starts with the lowest port in the range and sequentially tries higher ports until it can find one to which it can bind. This means that the first client you open will bind to 6881, the next to 6882, etc. Therefore, you only really need to open as many ports as simultaneous BitTorrent clients you would ever have open. For most people it's sufficient to open 6881-6889. Some recent BitTorrent implementations use DHT (Distributed hash tables), that is a decentralized hash system allowing each node of the network to keep track of other connected peers. So, even without a tracker, the swarm can continue to work. For DHT purposes UDP protocol is used.

So, if you are using NAT you have to forward TCP ports 6881-6889 in your router (at least one of them, say TCP 6881) to your local IP address. You must open UDP protocol too on that port. Be sure to make a correspondent rule in the firewall to allow incoming connections on the ports you opened (you can customize your incoming TCP port range from AXEPTool settings too).

AXEPTool uses TCP port 7780 for grid purposes, since it integrates two different webservises for publishing objects and monitoring their status through the use of a remote client. Open and forward this port too.

PLEASE KEEP OPEN YOUR AXEPTOOL ONCE YOU FINISH YOUR DOWNLOAD AND DON'T DELETE YOUR DOWNLOADED OBJECTS FROM YOUR DISK.

RUNNING THE AXEPTOOL / AXMEDIA

The AXEPTool icon or AXMEDIA icon should be present on your desktop at this point. Double click to start the application. The main window should display itself. On the top-right of the windows, you can see the URL of the tracker to which this AXEPTool is connected. If it is not correct you can change it by going in the settings menu.

AXMEDIA is mainly a stripped down version of AXEPTool. As a result, instructions for using both product are the same. In the following documentation we will only indicate when a feature is AXEPTool specific.



The user interface is easy to use. It consist of a main browser (similar to a web browser) which allows you to browse the Axmedis network and ask for file downloads.

This browser window is using tabbed browsing (like Mozilla Firefox or Internet Explorer 7) and you can navigate between tabs in the same way. There are four tabs :

- **The home page tab:** This can be used to greet the user, ask for login credentials or any other similar activity. This is the first pane that will be displayed when you open the application. Network designers can customize this page by changing the AXEPTool.conf configuration file.
- **The search ta :** This tabs points to the location of an Axmedis Query Server (or any other online software supposed to provide search capabilities on the Axmedis network). Use it to search content on Axmedis network.
- **The catalogue tab:** This is a link to a catalogue allowing users to browse a commercial like store. Use it to discover the files available on the Axmedis network and start a download. The AXTrack tracker provides such a catalogue but it is limited in functionality. However, network designers can implement a catalogue suited to their needs and modify the configuration file.
- **The downloads tab:** Use this tab to monitor the progress of your downloads, start, stop and resume them.

Above the browser, the usual « Previous » and « Next » button retains their usual meaning in a browser.

You can close tabs if you will (with the close button on the right of the tab's name) and you will be able to reopen the tabs with the AXEPTool menu on the left of the window.

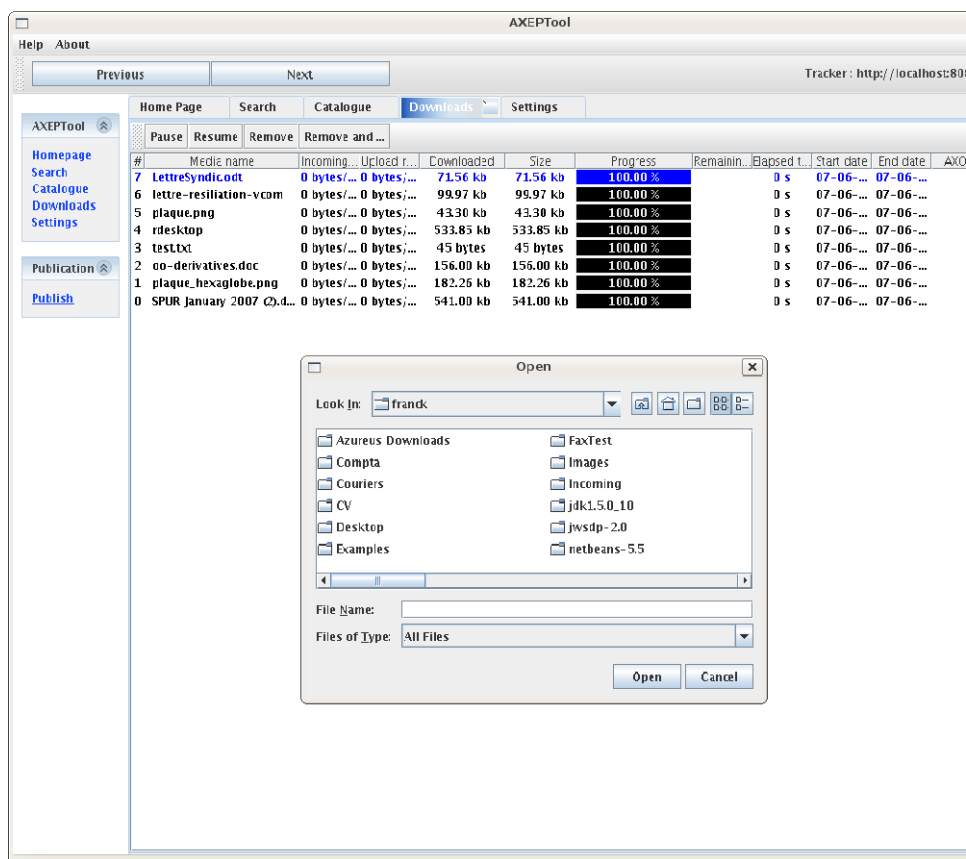
Other menu items and actions are:

- **Settings:** Allow you to configure the software without touching the configuration file by hand. This is mostly for system administrators.
- **Publish:** Allow you to publish a new file (wether an Axmedis object or not) to the tracker to which the AXEPTool is connected.

PUBLISHING A NEW FILE

You can use the AXEPTool to publish files on the network wether they are Axmedis objects or not. Files will be published on the tracker to which you are connected. Publishing a new file is a straightforward procedure.

After clicking on the « Publish » button of the publication menu, the application will open a file chooser dialog box. Just select the file you want to publish from your local hard disk and click on Open when you are done.



The application will then open a popup window while the publication is in progress. At the end of the publication:

- The file will be published on the tracker server.
- The torrent file will be created on your local hard drive in the directory specified in your configuration.

BROWSING THE CATALOGUE

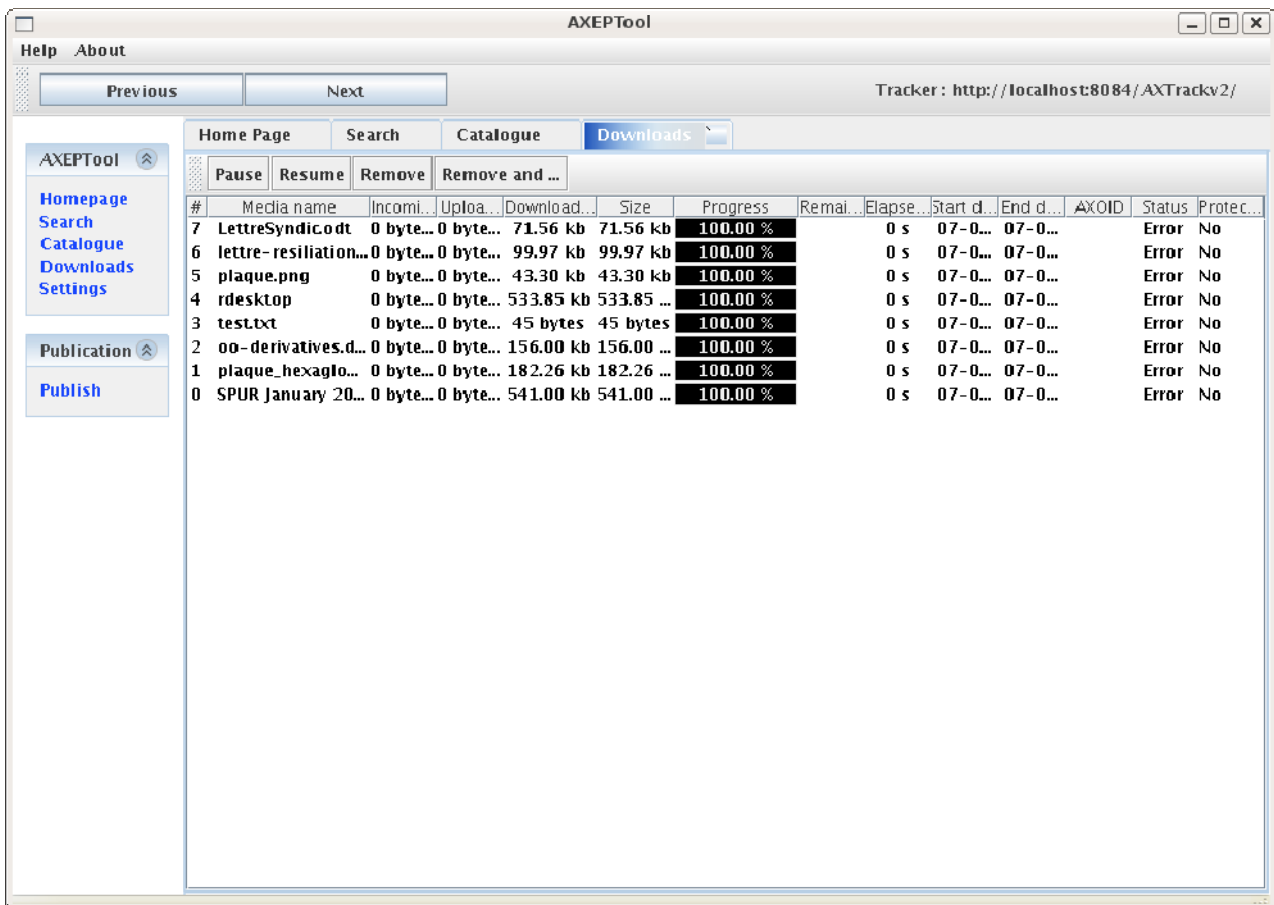
This section describe browsing the AXTrack provided Catalogue in order to download files. If your network administrator has choosen to use another catalogue, he must provides you with relevant instructions.

The catalogue is very simple. It displays both Axmedis Objects and Non Axmedis objects along with their size and meta-informations like AXOID and protected status.

Usage is very simple just click on the file you want to download. Once done, you can click on the « Downloads » tabs to see your download's progress.

THE DOWNLOADS TAB

The following screenshot show the download tab:



The table lists all the currently active downloads and or files you are publishing. For each file you can see :

- **The file name:** The file will be stored with this name on your hard drive.
- **The Incoming data rate:** Allows you to see if the download is currently fast or not. Incoming data rate can fluctuate a lot on bittorrent network so you should be using the time estimation if you want a reliable estimation.
- **The Upload data rate:** The amount of data you are currently uploading to other peers. If this number is too high then probably it will disturb other network activities on your own network. Do not saturate your internet connection ! (Many of them are asymmetrical).
- **The amount of bytes already downloaded along with total size**
- **A visual progress bar:** This allows you to see the progress instantly. Files which are at 100% progress are still in the list although no download is occurring. This is because it is a peer to peer network and these files are now seeding to other peers. You should not remove them unless you are constrained in terms of disk space

and/or bandwidth. Also please note that if you publish a file it will appear directly in the download list with a 100% progress bar set.

- **An estimation of the time remaining:** This estimation is based on past performance for the download. As speed can fluctuate greatly on peer to peer networks, this will not be as reliable as the time estimation for a regular internet download.
- **The elapsed time along with start date and end-date**
- **The AXOI :** Technical information for developers, this is displayed only in the AXEPTool and not in the AXMEDIA tool.
- **The statu :** Displays the errors and status of downloads. If the status is in error, this is probably because the tracker is unreachable.
- **The protected bit (wether set or not)**

The buttons above the download list allows you to control a particular download. Just select with your mouse the downloads on which you want to act and click on the button :

- **Pause:** Will stop the download temporarily. Use this if for example you need all your bandwidth for an important VOIP call. As soon as a download is paused, the consumed bandwidth by your AXEPTool should fall in a few seconds. (Although you may expect incoming connections attempts for a few minutes due to the nature of the bittorrent protocol).
- **Resume:** Allows you to resume a paused download. The download will start again normally. Due to the nature of the bittorrent protocol, it will probably not resume as fast as it were when you stopped it. Finding peers takes times. (Especially when the number of seeds is far lower than the number of leechers).
- **Remove:** Remove the download from the download list but keeps everything (including download file and torrent file) on your hard disk
- **Remove and delet :** Removes the download from the download lists and delete everything from your hard disk.

Additionally if you want to test a media file you just downloaded, you can double-click on it in the transfer list. The relevant media-player for the media type will automatically launch.

THE SETTINGS MENU

Home Page Search Catalogue Downloads Settings

Tracker URL :

Download Directory :

This AXEPTool URL :

Listen starting port :

I'm connected to a proxy

Server address :

Port :

Login :

Password :

(This is a feature specific to the AXEPTool, it is not present in AXMEDIA)

This tab allows you to configure your AXEPTool in order to integrate it with specific networks. This is an option for system administrators. Organizations releasing the Axmedia tool are expected to pre-configure it for their end-users.

The options accessible for AXEPTool configuration are as follows :

- **Tracker URL:** The URL of the tracker server you want to use. Please provide a tracker managed by the AXTrack tool.
- **Download Directory:** Enter the path where the files you download should be stored.
- **This AXEPTool URL:** Where the integrated web server should listen. This is for developers and advanced users only.
- **Listen starting port:** The bittorrent port on which you can listen. This feature is useful if your AXEPTool is behind a NAT firewall. This way you can use port redirection to allow more than one AXEPTool behind this NAT firewall. If unsure of what this means, ask your system administrator.
- **I'm connected to a proxy:** If your company connects you to the internet through a proxy server, you should check this box. If you do so, you must fill in the parameters below. If you do not, the values below will just be ignored. If the AXEPTool does not work in your corporate environment, ask your system administrator if there is a proxy and if so, fill the configuration.
- **Proxy Server Address:** The URL of your proxy server.
- **Proxy Port:** The port of your proxy server.
- **Proxy Login:** The login of your proxy server.
- **Proxy Password:** The password of your proxy server.

When you are satisfied with your settings, you can click on validate. Once done, you should restart your AXEPTool for everything to take effect.

THE SEARCH TAB

The screenshot shows the search interface of the AXMEDIS P2P Query Portal. At the top, there is a navigation bar with tabs for 'Home Page', 'Search', 'Catalogue', 'Downloads', and 'Settings'. Below this is a blue banner with the AXMEDIS logo and the text 'AXMEDIS P2P Query Portal'. The main search area includes a 'QuickQuery' section with a text input field and a 'Find Any Word' checkbox. Below that is a 'Metadata' section with radio buttons for 'Match any' (selected) and 'Match all', followed by a dropdown menu for 'Abstract', another dropdown for 'Contains', and an empty text input field. There are also 'Add[+]' and 'Remove[-]' buttons. At the bottom of the search area, there are 'InviaRichiesta' and 'Azzera' buttons. A footer bar at the bottom right contains the copyright notice '(c) AXMEDIS 2006-2007'.

The search tab is only a browser link to AXMEDIS's query interface. In order to use it, please refer to the corresponding documentation.

REFERENCES AND LINKS

AXMEDIS TUTORIALS

- General Tutorial and Overview (November 2007, Barcelona, Spain)
 - PPT: http://www.axmedis.org/documenti/view_documenti.php?doc_id=3653
 - Video on [part 1](#)
 - Video on [part 2](#)
 - Video on [part 3](#)
 - Video on [part 4](#)
 - Video on [part 5](#)
 - Video on [part 6](#)
- Content Production Tutorial (AXMEDIS 2007 Conference)
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3869
- Content Distribution Tutorial (AXMEDIS 2006 Conference)
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2666
- Content Processing Tutorial (AXMEDIS 2006 Conference)
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3868
- Workflow Tutorial (AXMEDIS 2006 Conference)
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2652
- [AXMEDIS general overview and content production tutorial, March 2008](#)

AXMEDIS TOOLS FOR FREE DOWNLOAD

- General download page: <http://www.axmedis.org/documenti/documenti.php>
- AXMEDIS content production tools include:
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3722
Free Download of AXMEDIS Content Production Tools (editor and GRID AXCP tools, PnP, DRM editor, etc.), all what you need to create AXMEDIS objects and process any kind of content automatically: SMIL, HTML, MPEG-21, content adptation,, fingerprint, crawling, indexing, cms, search, retrieval, control of P2P, etc. and much more. See documentation included
- AXMEDIS players for PC:
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3715
AXMEDIS PC player version 1.2 January 2008. Free download, AXMEDIS player, MPEG-21 player, cross media player, SMIL, HTML, MPEG-4 ,etc
- AXMEDIS multiskin player for PC:
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3716
AXMEDIS MultiSkin PC player version 1.2 january 2008. Free download, AXMEDIS player, MPEG-21 player, cross media player, SMIL, HTML, MPEG-4, with different skins available.
- AXMEDIS Active X Player for PC for Web Pages, AXMEDIS .Net Player, MPEG-21 player, SMIL, HTML, MPEG-4, cross media, more than 200 file formats:
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3717
- AXMEDIS player plus EUTELSAT OPENSKY client integrated
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3767
- AXEPTools: P2P client tool for establishing connection with the AXMEDIS P2P B2B network as Business User:
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3840
- AXMEDIA: P2P client tool for establishing connection with the AXMEDIS P2P B2B network as final users:
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3841
- AXMEDIS PDA player for Windows Mobiles 5 and 6:
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3842
It is capable to play AXMEDIS objects based on SMIL, HTML, video, audio, MPEG-4 files, etc. AXMEDIS PDA player for AXMEDIS MPEG-21 content including resources with presentations layer based on MPEG-4, HTML and SMIL
Unzip the file, copy the CAB file and execute it on the PDA
- Collection of Objects for AXMEDIS player for PDA (Jan 2008):
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3748

AXMEDIS TECHNICAL NOTES

- [AXMEDIS Content Model and Tools, Authoring Tools, Players for MPEG-21, PC, PDA, Mobile, STB, PVR, HDR, etc. \(in English\)](#)
- [AXMEDIS Content Model and Tools, Authoring Tools, Players for MPEG-21, PC, PDA, Mobile, STB, PVR, HDR, etc. \(in Italian\)](#)
- [AXMEDIS Content Processing GRID all features listed \(in English\)](#)
- [AXMEDIS Content Processing GRID Tutte le caratteristiche descritte \(in Italian\)](#)
- [AXMEDIS P2P Controlled network all features listed with cases \(in English\)](#)
- [AXMEDIS P2P Controlled network tutte le caratteristiche, con alcune casistiche \(in Italian\)](#)
- [AXMEDIS DRM, MPEG-21 DRM, Interoperable DRM \(in English\)](#)
- [AXMEDIS DRM, MPEG-21 DRM, DRM interoperabile \(in Italian\)](#)
- [Technical note on how to integrate the AXMEDIS DRM into an e-commerce portal and content distribution solution for content on demand and subscription](#)
- [Come integrare AXMEDIS DRM in un portale per la distribuzione di contenuti digitali \(in Italian\)](#)
- [AXMEDIS Show Case, AXMEDIS Mpeg-21 Content distribution via datellite dta broadcast, EUTELSAT OPENSKY](#)
- [Technical note on the ELION AXMEDIS content on demand trial and solution, how to exploit AXMEDIS framework to create an cross media content distribution with DRM and automated production, and connection with P2P](#)
- [Technical note on the TEO IPTV AXMEDIS trial and solution, how to exploit AXMEDIS framework to create an IPTV with DRM and automated production, and connection with P2P.](#)

AXMEDIS SOLUTIONS

- Content Management Automation, AXCP:
http://www.axmedis.org/com/index.php?option=com_content&task=view&id=94&Itemid=33
- AXMEDIS controlled P2P:
http://www.axmedis.org/com/index.php?option=com_content&task=view&id=97&Itemid=34
- AXMEDIS production tools and players:
http://www.axmedis.org/com/index.php?option=com_content&task=view&id=101&Itemid=35
- AXMEDIS DRM, MPEG-21 DRM:
http://www.axmedis.org/com/index.php?option=com_content&task=view&id=99&Itemid=36
- FAQs: http://www.axmedis.org/com/index.php?option=com_content&task=blogcategory&id=7&Itemid=73

AXMEDIS SHOWCASES

- [Content Distribution to Licensed Domains via DVB-T and P2P \(BBC\)](#)
- [Protected Video on Demand Distribution via P2P toward PC \(Tiscali\)](#)
- [Protected Video on Demand \(VOD\) Distribution to PC \(ELION\)](#)
- [Content Distribution via Satellite Data Broadcast \(DVB-S\) to PC and STB \(EUTELSAT\)](#)
- [Content Distribution to Kiosks \(ILABS\)](#)
- [Video on Demand \(VOD\) Distribution to Set Top Box \(TEO\)](#)
- [Content Posting Tool, for Final User content production/publication/DRM \(SIAE\)](#)
- [Variazioni: Enrichment of Cultural Content](#)
- [AXMEDIS Content and Tools: Automatic Production](#)
- [AXMEDIS Controlled P2P Network](#)

AXMEDIS FRAMEWORK SPECIFICATION

- AXMEDIS Framework [General aspects, Editor and Model](#)
http://www.AXMEDIS.org/documenti/view_documento.php?doc_id=1891
- AXMEDIS Command Manager http://www.AXMEDIS.org/documenti/view_documento.php?doc_id=2686

- AXMEDIS Object Manager and Protection Processor:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1972
- AXMEDIS Editor and Viewers: http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2213
- AXMEDIS External Editors, Viewers and Players:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2211
- AXMEDIS Content Processing Area:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1958
- AXMEDIS External Processing Algorithms:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2017
- AXMEDIS CMS Crawling capabilities:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1907
- AXMEDIS Database and query support:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1932
- AXMEDIS AXEPTool and AXMedia Tools:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2718
- AXMEDIS Programme and Publication Tools:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1885
- AXMEDIS Workflow Tools:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1883
- AXMEDIS Certifier and Supervisor and networks of AXCS
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1952
- AXMEDIS Protection Support
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1882
- AXMEDIS Accounting and Reporting :
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1887
- [Definitions Terms tables links http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1388](http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1388)

AXMEDIS reports on basic enabling technologies

- Content Model and Managing, MPEG-21, authoring, etc.
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2324
- Content indexing and querying:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2436
- Content processing, Composition and Formatting
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2374
- Content sharing and Production on P2P:
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2454
- Content Protection and Supervision http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2371
- Content Distribution via Internet
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2451
- Content Distribution via Mobile
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2442
- Content Distribution via Satellite data broadcast
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2313
- Usability issues
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2339

- AXMEDIS vs [DMP MPEG21 Analysis](http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1063) http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1063
- AXMEDIS Framework Infrastructure, guidelines and some tools http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1391
- AXMEDIS Framework Validation and integration http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2445

Basic knowledge reports

- User requirements http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1712
- Use Cases http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1824
- Test Case http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2023

Content Modeling and Test Cases

- [Content Aspect Specification](http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1389) http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1389
- [Content Aspect Specification Appendix](http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1670) http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1670
- [Content for Test Cases and Validation](http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1393) http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1393
- [Content Selection Guidelines](http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1390) http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1390
- [Multilingual Guidelines and Technical Solutions](http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1427) http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1427
- [AXMEDIS Editorial Format Guidelines and basic examples](http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1394) http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1394

AXMEDIS FRAMEWORK DEMONSTRATORS, CASES, TRIALS, FOR DISTRIBUTION ETC.

- requirements and use cases of AXMEDIS ELTEO of the content distribution for DVB-T to STB of Telecom Lithuania, and content distribution of Telecom Estonia http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2978
- requirements and use cases of the 4HOME take up, demonstrators of BBC, TI, SDAE, including domains, AXMEDIS for broadcasting, and OMA integration and distribution http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2976
- Specification final version of Take up AXMEDIS ELTEO for Video on demand, STB, IPTV solutions based on AXMEDIS technology: http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=3096
- Integrated CMS integration aspects: http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2853
- Integrated prototype: automated content production and formatting: http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2939
- Integrated Distribution on demand via Internet http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2951
- Integrated distribution via satellite data broadcast: http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2954
- Integrated distribution towards mobiles: http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2945
- Integrated Distribution towards PDA via Kiosks: http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2944
- Content Posting Portal, Content Posting for Final User publication, SIAE Trial presentation:
 - http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2922

- http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2923
- VARIAZIONI project portal: <http://www.variazioniproject.org/>

BROCHURES AND PRESS CUTTING (A PART)

- AXMEDIS Project Brochure
http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2712
- Annual Public Report (2007): http://www.axmedis.org/documenti/view_documenti.php?doc_id=3621
- Annual Public Report (2006) http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=2471
- Annual Public Report (2005) http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1439
- AXMEDIS Project Synopsis http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1668
- Digital Media in Italy presentation http://www.AXMEDIS.org/documenti/view_documenti.php?doc_id=1669

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- ISO/IEC, ISO/IEC FDIS 21000-6 - Rights Data Dictionary. ISO/IEC JTC 1/SC 29/WG 11/N5842. July 2003.
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- OMA DRM Rights Expression Language version 2 (OMA DRM REL v.2), <http://www.openmobilealliance.com/>
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