Automating Production of Cross Media Content for Multi-channel Distribution
www.AXMEDIS.org

DE12.2.5.3
AXMEDIS-ELTEO Final Report and Success Story

Version: 1.0
Date: 28.08.2008
Responsible: TEO (revised and accepted by coordinator)

Project Number: IST-2-511299 Project Title: AXMEDIS Deliverable Type: report Visible to User Groups: yes Visible to Affiliated: yes Visible to the Public: yes
Deliverable Number: DE12.2.5.3 Contractual Date of Delivery: M48 Actual Date of Delivery: 28.08.2008 Title of Deliverable: Document Work-Package contributing to the Deliverable: WP12.2. Task contributing to the Deliverable: WP12.2.5 Nature of the Deliverable: report Author(s):TEO, Elion, KTU, VRS

Abstract: This report is a deliverable of workpackage WP12.2.5 AXMEDIS-ELTEO: Validation and demonstrator. The document describes the TEO IPTV AXMEDIS and Elion AXMEDIS demonstrators trial results
Keyword List: TEO IPTV AXMEDIS demonstrator , Elion AXMEDIS demonstrator, users profile, feedback, data analysis

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Table of Contents

1   Executive Summary and Report Scope

As part of AXMEDIS project, a group of partners from Baltic States has undertaken to deploy an integrated AXMEDIS Framework for video-on-demand distribution.   The real life demonstration prototype involves a video content producer from Lithuania (VRS Grupe), and two broadband operators – Elion (Estonia), operating an internet-based media distribution portal, and TEO (Lithuania) – IPTV service provider.   Although the purpose of the demonstrator is to show how AXMEDIS tools can be used in an integrated automatic content production and distribution value chain, this technical note describes the technical aspects of the TEO platform, integrating AXMEDIS tools into IPTV video on demand (VOD) service.

The purpose of the TEO demo is to showcase AXMEDIS technology adopted for IPTV platform.   It demonstrates broadband operator's distribution of video on demand (VOD) content to trial IPTV service subscribers.   IPTV service subscribers can view digital video material on their TV through an AXMEDIS compliant Set Top Box (STB).

The purpose of the Elion demo is to showcase AXMEDIS technology adopted for streaming/downloading protected AXMEDIS content to PC over Internet.   It demonstrates broadband operator's distribution of value added video on demand (VOD) content to Elion trial internet service subscribers using the media rental.   Internet service subscribers can view digital video material on their PC through an AXMEDIS PC Player.   The Elion demonstrator for the exploitation of AXMEDIS Framework intends to show business to consumer (B2C) digital content distribution on IP network by downloading video content into PC using http server. The content can consist of AXMEDIS objects with any kind of content: video, images, document, audio, animations, etc. The content is protected at content producer level using special AXMEDIS DRM technology. Usage licenses are produced on the fly when an AXMEDIS object is bought by the consumer.

2   Demonstrations

2.1   TEO IPTV AXMEDIS VOD Demonstrator

In TEO AXMEDIS demonstrator to view the AXMEDIS content user must be subscriber to TEO IPTV service Gala TV (available with limitations in Lithuania only), be included in the AXMEDIS test user group and have an AXMEDIS compliant STB Motorola 1720 (provided by the service provider). Alternatively, the demonstrator is also available for public access using special STB remote control software.

### 2.1.1   Number of people accessed to the demonstrator

To access to public demonstrator, user must to register, download and install STB remote control software. There are 59 unique users registered in public demonstrator. They have accessed demonstrator from 33 unique IP addresses. (Please note, that all users from KTU have reached public demonstrator through same proxy server, i.e. same IP address)

2.1.2   Users profiles and feedback

Users have been asked to fill feedback form in STB or the same feedback form in web (http://ifko.ktu.lt/TEODemonstrator/TimeTracker/Feed.aspx) after registration and usage of demonstrator. In feedback form users are asked to fill information about user type, age group, satisfaction with the demonstrator, etc. Feedback form is presented in Annex 1.

Till 2008-08-26 47 users has filled feedback forms. Received results are presented below.

Most of users described himself as final user (38), 6 users are as business user and 3 as technical users. This is presented in picture below.
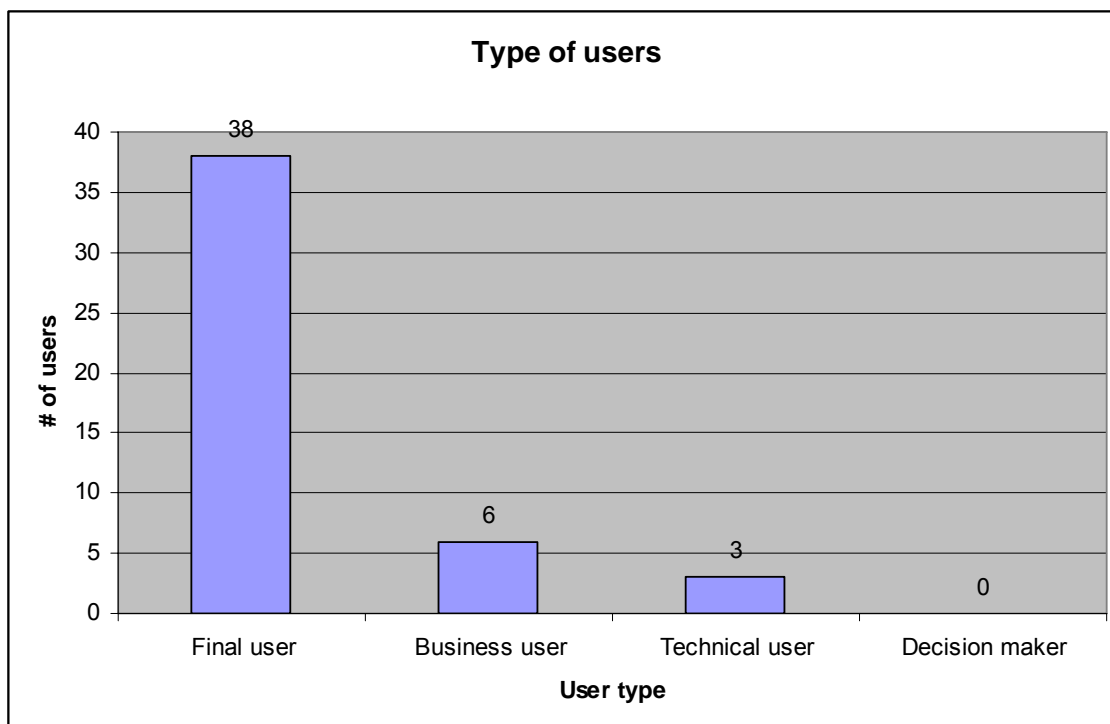
Most of users are from age groups 25-34 and 35-44 (29 users). 8 users are from age group 18-24, 6 users are from group over 54, 4 users are from age group 45-54 and no one is from group under 18. Graphically these data is presented in picture below.

Users age group

How relevant is the demonstrator
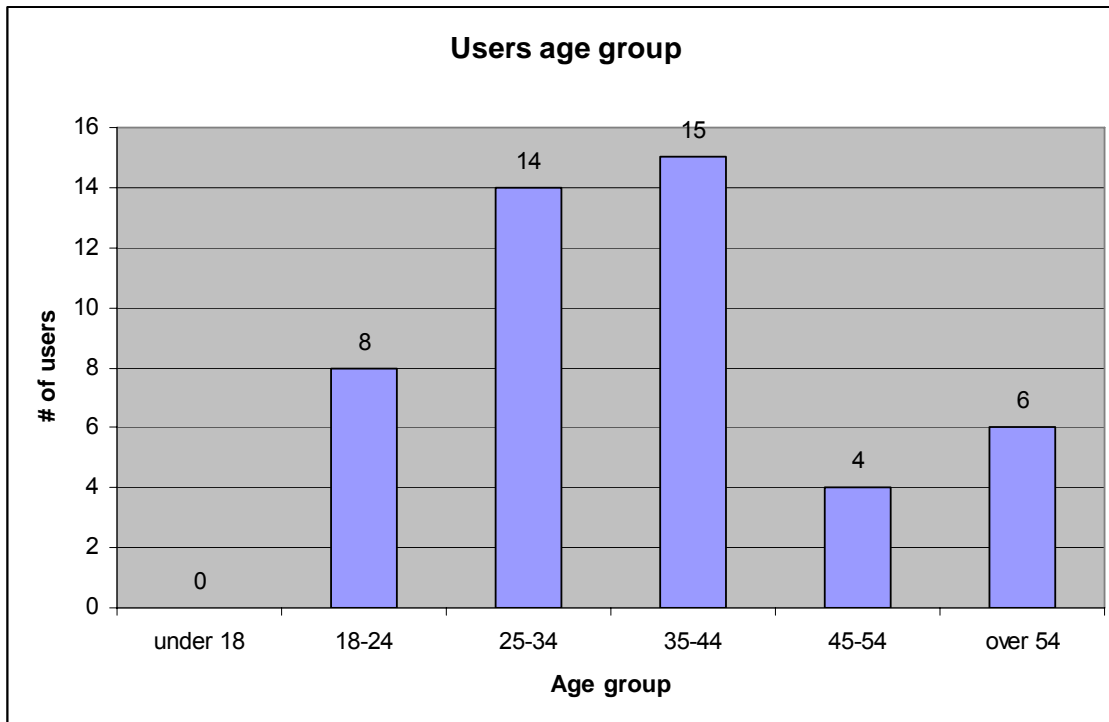
Most of users are relevant to the demonstrator (23), 14 users are in some relevance and 10 users are very relevant to the demonstrator. No one user responded, that he is not relevant to the demonstrator.
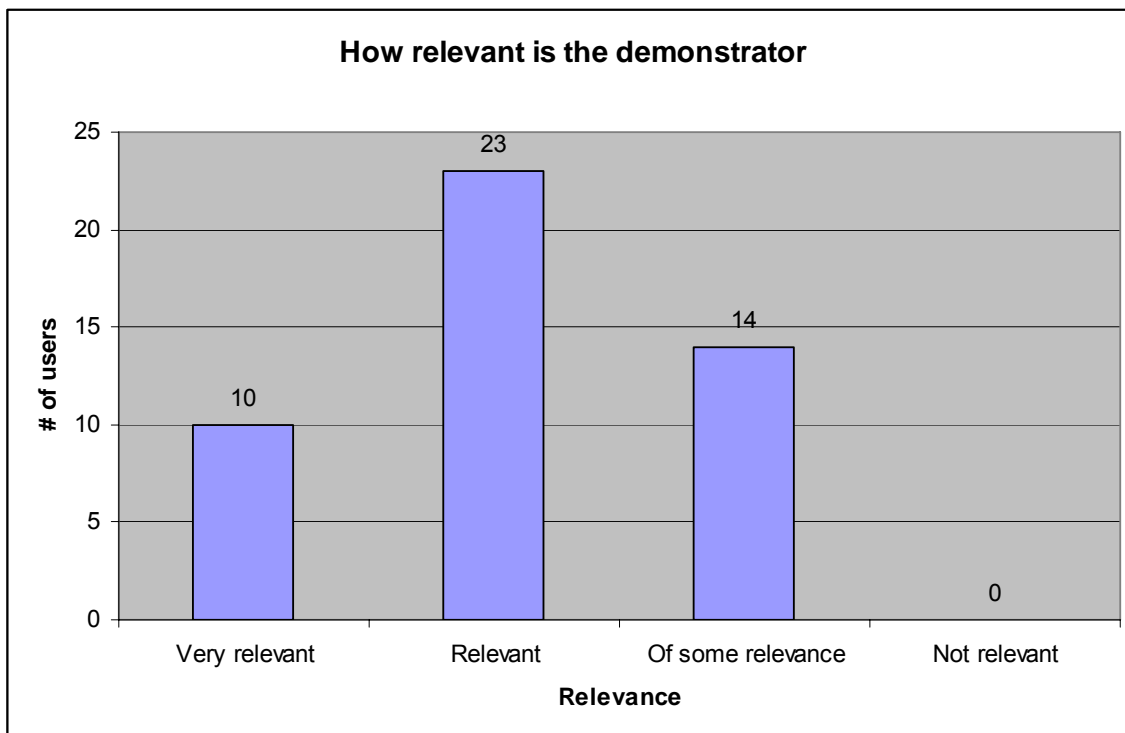
Most of users are satisfied with the demonstrator (30), 11 users are very satisfied and 6 are moderately satisfied.

5

How satisfied are you with the demonstrator?

A bar chart titled "How satisfied are you with the demonstrator?" with the y-axis labeled "# of users" ranging from 0 to 35, and x-axis labeled "Satisfaction". Very satisfied: 11, Satisfied: 30, Moderately satisfied: 6, Not satisfied: 0.
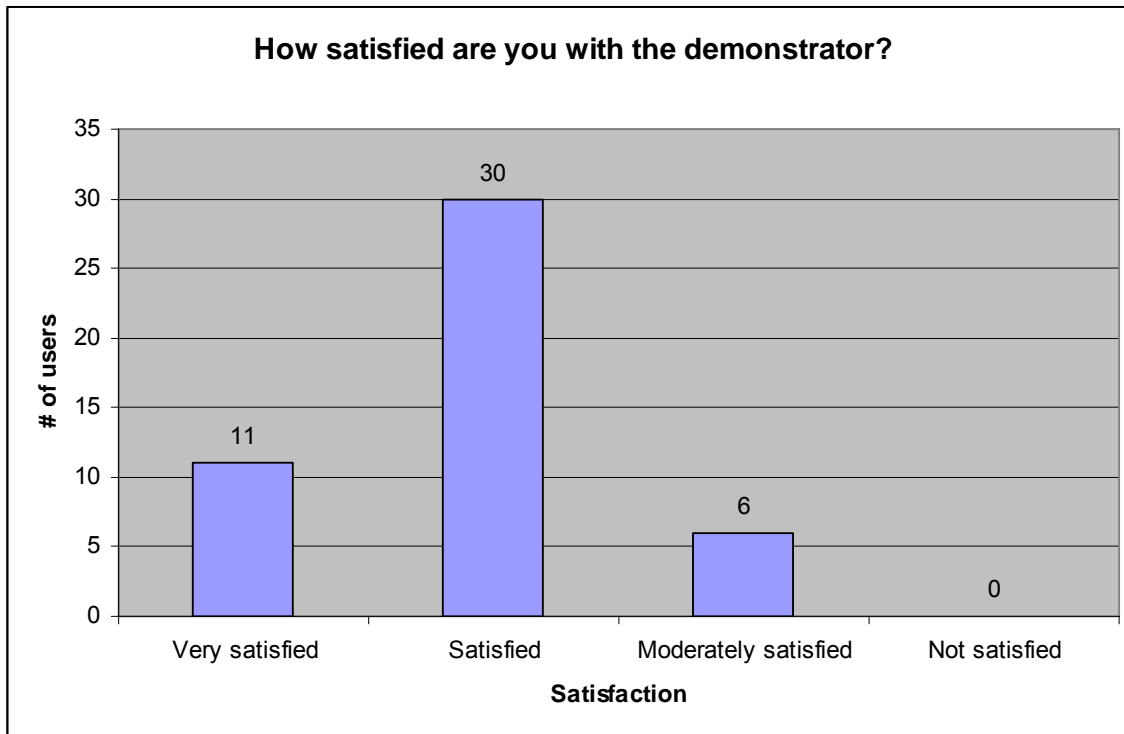
To access public TEO demonstrator, user must to register, download and install STB remote control software. After registration in Demonstrator page (http://ifko.ktu.lt/TEODemonstrator) user can read detailed instructions about installation STB remote control software. How to use STB is described in http://www.axmedis.org/com/index.php?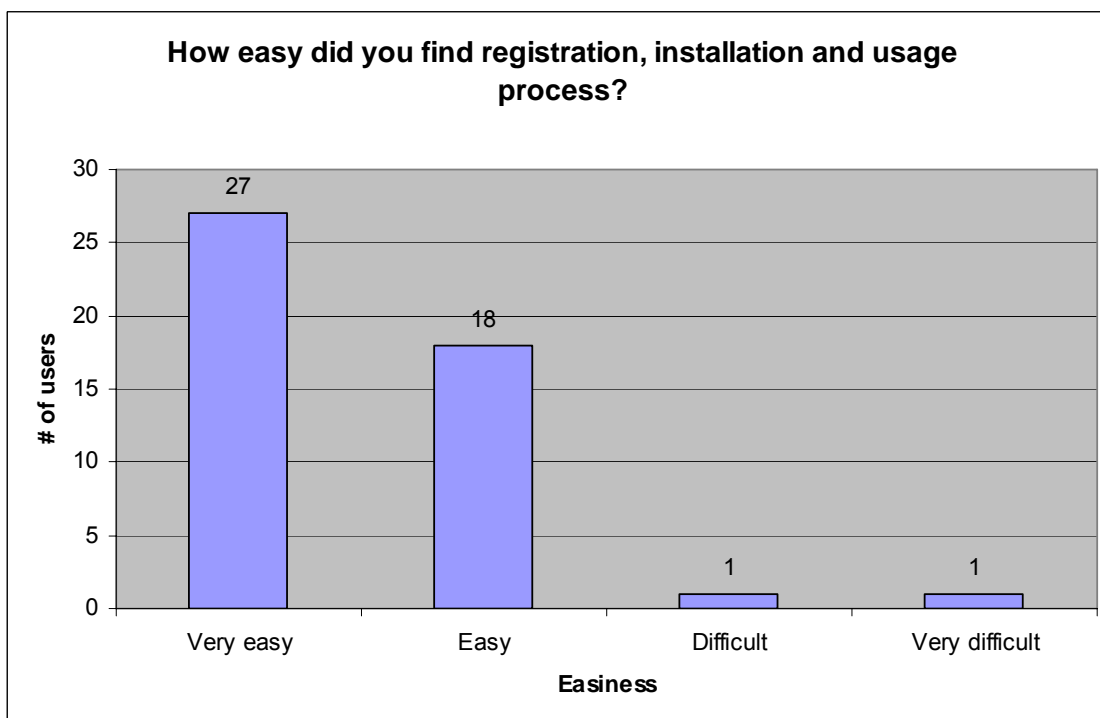option=com_content&task=view&id=72&Itemid=51. Most of users find that registration, installation and usage process is very easy (27 users) or easy (18 users). For 1 user this process was difficult and for 1 user it was very difficult.

How easy did you find registration, installation and usage process?

A bar chart titled "How easy did you find registration, installation and usage process?" with the y-axis labeled "# of users" ranging from 0 to 30, and x-axis labeled "Easiness". Very easy: 27, Easy: 18, Difficult: 1, Very difficult: 1.

Unfortunately, we didn't receive any further comments or feedback.

2.1.3   Other demonstrations

At 2008-04-28 TEO Axmedis VOD solution was presented in international conference organized by Microsoft - "Inovacijų diena 2008" (Inovations Day 2008) in Vilnius, Lithuania (http://www.inovacijudiena.lt/Default.aspx lithuanian only).

2.2   TEO IPTV AXMEDIS VOD Demonstrator data analysis
2.2.1   Description and number of content accessible from the demonstrator

In TEO IPTV AXMEDIS Demonstrator 29 objects are created and presented to the end users. All objects are created by VRS, which is content creator for whole ELTEO demonstrator. For TEO demonstrator objects are video created in MPEG-2 TS format, which is suitable for VOD distribution.

6 of 29 video objects are not protected, other are protected. To show business case usability to employ different payment schemes, in some objects commercials are added. User can select same content with (cheaper) or without (expensive) commercials.

All objects and their features are presented in table below.

Object title	Protected	Has commercials	View Count
VRS teaser1	-	-	418
VRS teaser4	-	-	175
VRS002Watch	+	-	107
ELTEO_STB	+	-	71
VRS-1-5c	+	+	58
VRS teaser2	-	-	45
VRS006Bench	+	-	24
VRS023Photo	+	-	24
VRS teaser3	-	-	24
VRS teaser5	-	-	23
VRS005Dummy	+	-	22
VRS-1-0c	+	-	16
VRS-2-5c	+	+	16
VRS025Umbrella	+	-	14
VRS teaser6	-	-	14
VRS-1-2c	+	+	13
VRS050Kiss	+	-	12
VRS038Theft	+	-	11
VRS-4-5c	+	+	11
VRS-5-5c	+	+	11
VRS-3-5c	+	+	10

AXMEDIS project

VRS-2-0c	+	-	9
VRS-2-2c	+	+	9
VRS027Ballattack	+	-	8
VRS-3-0c	+	-	8
VRS-4-2c	+	+	7
VRS-3-2c	+	+	5
VRS-4-0c	+	-	5
VRS-5-0c	+	-	4

2.2.2   Number of transaction

During period 2008-02-11 – 2008-08-27 531 session was made to the TEO public demonstrator.

Maximum sessions/day: 30

Average sessions/day: 1.6
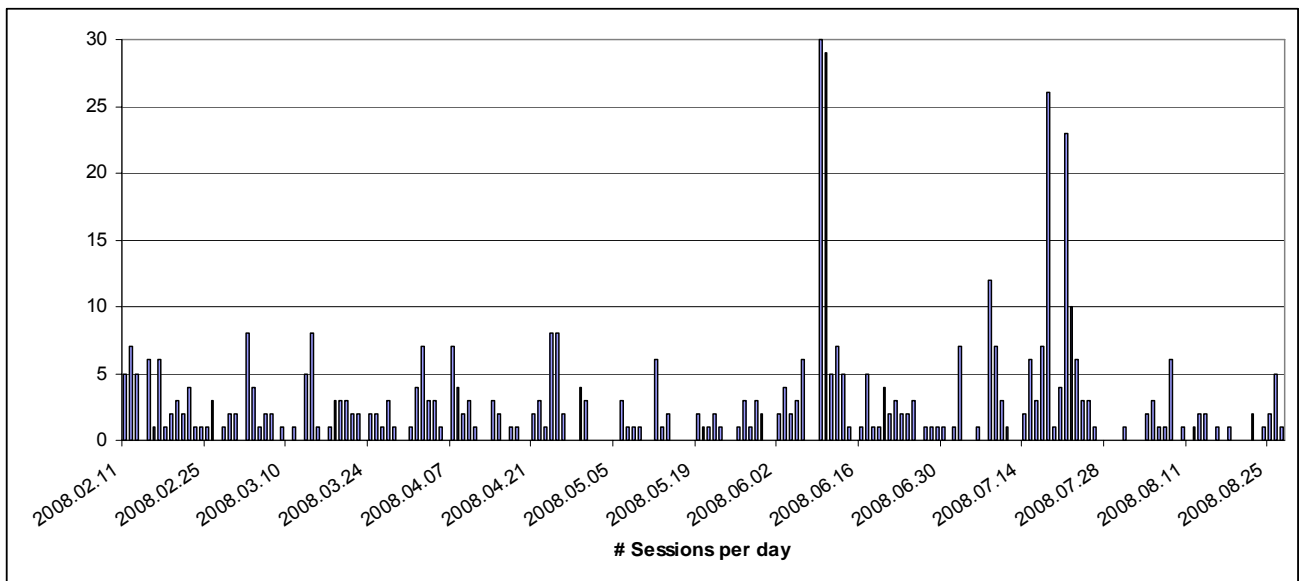
1174 times video objects were selected for play. Far of them are made by testers, who have connected to demonstrator very often.

2.2.3   Distribution of content accessed

All objects view count is presented in picture below.
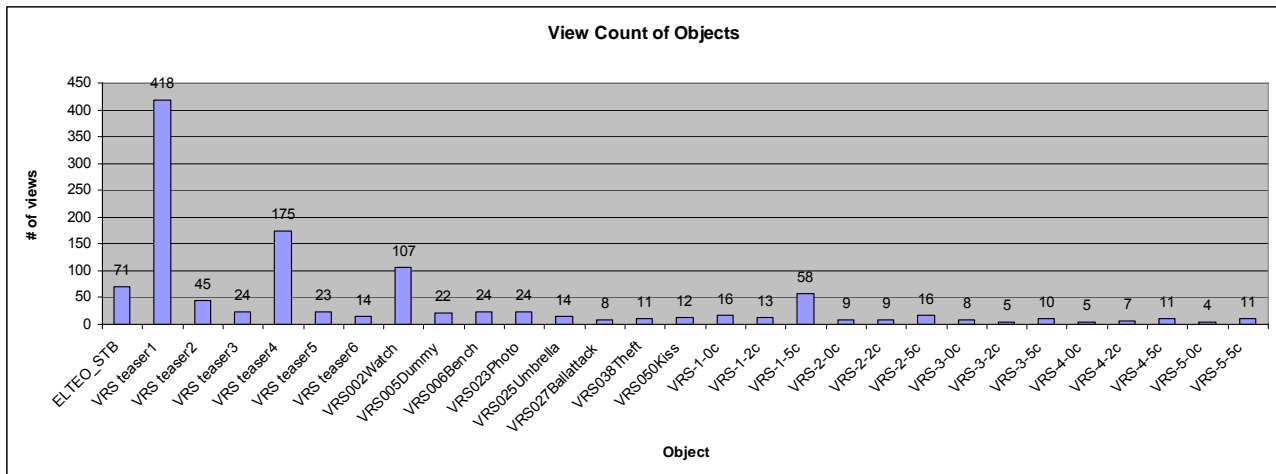
The TOP 5 of objects are presented below. VRS teaser 1 is most viewable, because it is in first row in first screen of browser window.

Object tittle	View Count
VRS teaser1	418
VRS teaser4	175
VRS002Watch	107
ELTEO_STB	71
VRS-1-5c	58
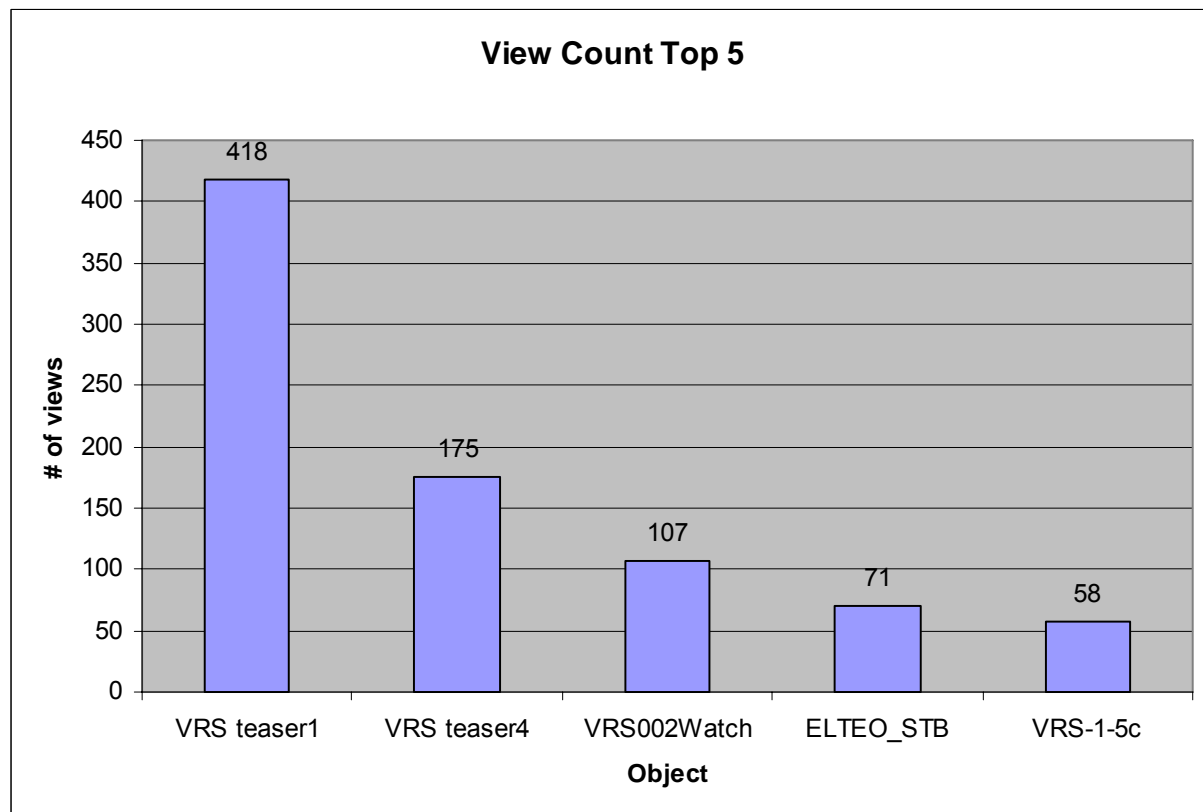
2.2.4   Availability over the period

TEO IPTV AXMEDIS Demonstrator was available 24/7 over all period starting from 31 January 2008, except small period when was electricity problem.

2.3 Elion AXMEDIS Demonstrator

In Elion demonstrator the end users has to connect to www.hot.ee portal AXMEDIS subsection for on demand download and consumption of AXMEDIS objects. Demonstrator runs on public IP networks, by default it is in Estonian language and targets Estonians who have subscribed to www.hot.ee portal. End users use personal computers with installed AXMEDIS Player that can be downloaded from www.hot.ee or Elion show case pages on AXMEDIS web site.

2.3.1 Number of people accessed to the demonstrator

For demonstrator access user must be a registered user on www.hot.ee portal and must be also logged on. By 28th august 2008 the demonstrator was accessed by 277 hot.ee accounts and 277 unique IP addresses.

2.3.2 Which strategy has been applied to attract them

All content was set to be free of charge. In addition 2000 registered accounts were selected during august from www.hot.ee membership base and directly mailed with request to try out AXMEDIS demonstrator.

2.3.3 Which profile they have

Due to the nature of the demonstrator it was decided that we will not collect information on the user type and will assume the "Final user" state for all of them. Out of the 277 unique users 10 are technical accounts used by Elion for development & demonstration.

2.3.4 Who they are

Hot.ee maintains anonymous internet user base, local language is required for usage as such we assume that all users are Estonians. No age or identity verification has been done due to content of being free of charge and without age limitation.

Hot.ee users were asked to give mandatory evaluation in 5 point system to the AXMEDIS demonstrator after the media file was downloaded. The following table lists the results of the given evaluation.
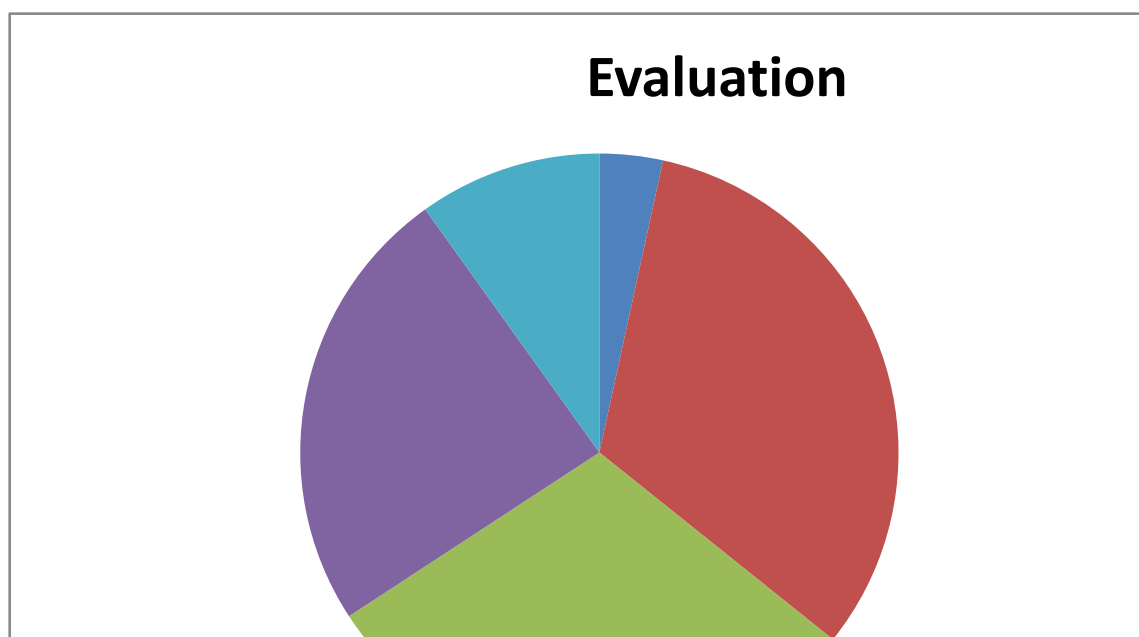
2.4 ELION AXMEDIS VOD Demonstrator data analysis

2.4.1 Description and number of content accessible from the demonstrator

Elion AXMEDIS Demonstrator hosts 36 AXMEDIS objects created by VRS who is the content creator for whole ELTEO demonstrator block. The objects contain hidden camera video clip encoded with MPEG-4 in standard PAL resolution suitable for PC playback. All objects are protected and require appropriate licenses for playback. While commercialization is supported it is not used due to need for higher user participation. Available objects are listed in table below.

Object	Protected	Views
VRS teaser-3 mpeg4.axm	yes	42
VRS-020-Doggy.axm	yes	20
VRS-023-Photo.axm	yes	38
VRS-025-Umbrella.axm	yes	18
VRS-070-Stop!Work-area.axm	yes	17
VRS-071-Crow-in-the-fridge.axm	yes	8
VRS-072-Falling-palm-tree.axm	yes	15
VRS-073-Shopping.axm	yes	13
VRS-074-Snow-track.axm	yes	13
VRS-075-Glasses.axm	yes	9
VRS-076-Car-thief.axm	yes	12
VRS-077-Ball-behind-the-wall.axm	yes	14
VRS-078-Try-on-cabin.axm	yes	13
VRS-079-Money-under-the-wheel.axm	yes	19
VRS-080-Fountain.axm	yes	11
VRS-081-Falling-pillars.axm	yes	11
VRS-083-Brandy.axm	yes	13
VRS-083-Cartoon.axm	yes	5
VRS-084-Cake.axm	yes	8
VRS-085-Monster.axm	yes	12
VRS-086-Fork.axm	yes	8
VRS-087-Baloons.axm	yes	16
VRS-088-Distortion-mirror.axm	yes	13
VRS-089-Crazy-umbrella .axm	yes	8
VRS-090-Tube.axm	yes	13
VRS-091-Sealed-grocery-bag.axm	yes	10
VRS-092-Pigeons.axm	yes	16
VRS-093-Aria.axm	yes	13
VRS-094-Grocery-snatcher.axm	yes	12
VRS-095-Baloon-burst.axm	yes	17
VRS-096-Lousy-singer.axm	yes	12
VRS-097-Gift-sack.axm	yes	7
VRS-098-Roadblock.axm	yes	15
VRS-099-Crazy-bear.axm	yes	13
VRS-100-Street-war.axm	yes	12
VRSdemo-bear mpeg4.axm	yes	18

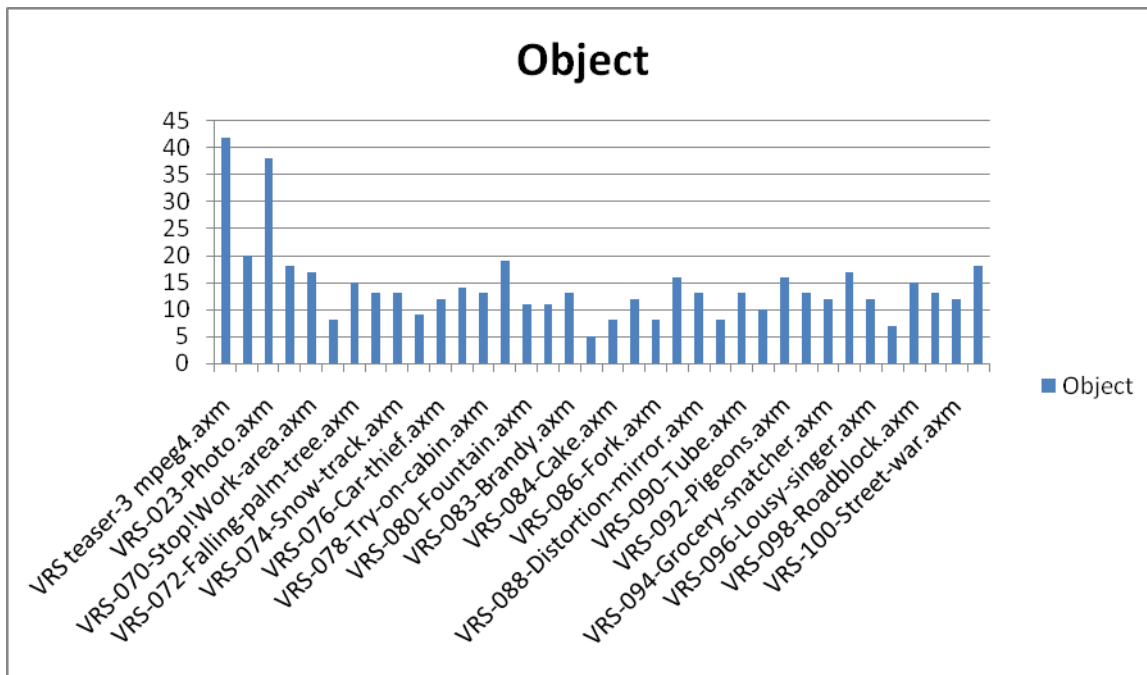### 2.4.2 Number of transactions

During period of 11th February 2008 – 28th august 2008 477 licenses were issued to media objects.
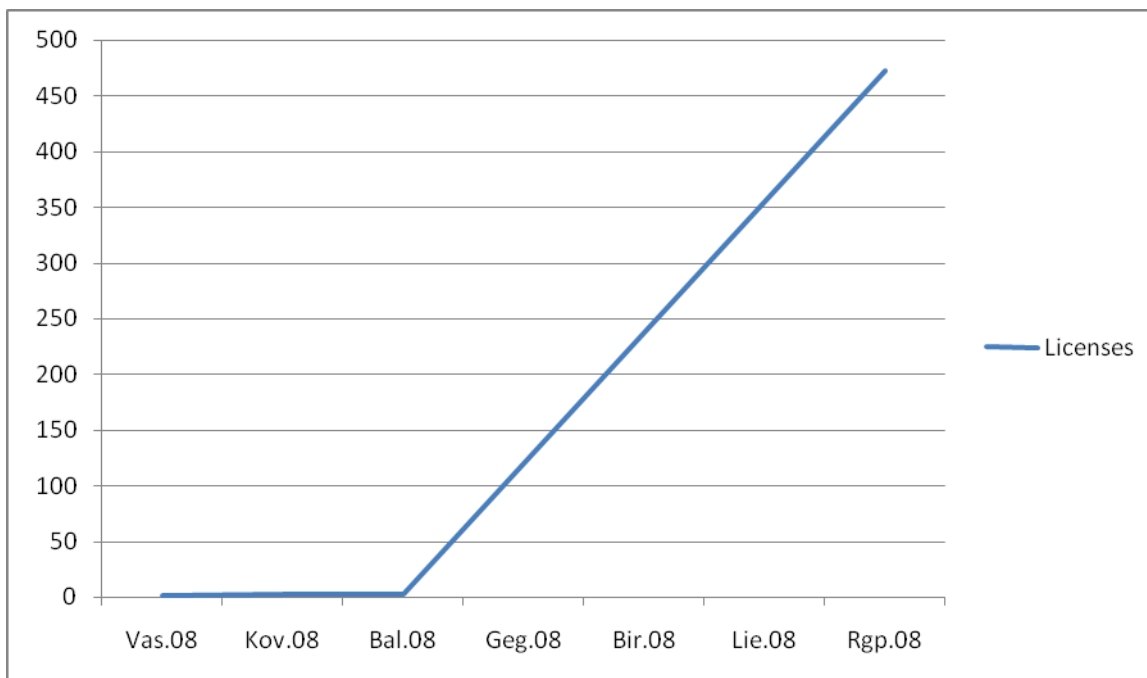
In August 2008 Elion launched more aggressive campaign for user promotion. The result was 472 licenses and average of 16.8 Licenses per day. Following table shows issuing rate
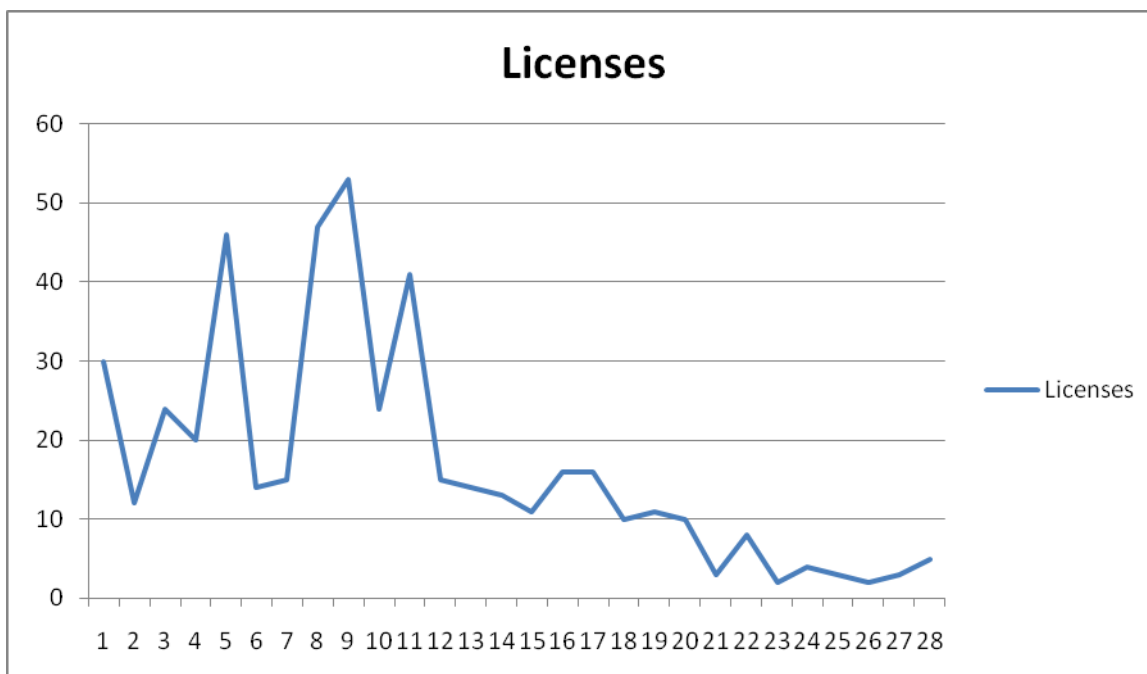
2.4.3   Distribution of content accessed

Here is the object access list ordered by views

Object	Views
VRS teaser-3 mpeg4.axm	42
VRS-023-Photo.axm	38
VRS-020-Doggy.axm	20
VRS-079-Money-under-the-wheel.axm	19
VRS-025-Umbrella.axm	18
VRSdemo-bear mpeg4.axm	18
VRS-095-Baloon-burst.axm	17
VRS-070-Stop!Work-area.axm	17
VRS-092-Pigeons.axm	16
VRS-087-Baloons.axm	16
VRS-098-Roadblock.axm	15
VRS-072-Falling-palm-tree.axm	15
VRS-077-Ball-behind-the-wall.axm	14
VRS-078-Try-on-cabin.axm	13
VRS-083-Brandy.axm	13
VRS-073-Shopping.axm	13
VRS-074-Snow-track.axm	13
VRS-099-Crazy-bear.axm	13
VRS-093-Aria.axm	13
VRS-088-Distortion-mirror.axm	13
VRS-090-Tube.axm	13
VRS-076-Car-thief.axm	12
VRS-085-Monster.axm	12
VRS-094-Grocery-snatcher.axm	12
VRS-096-Lousy-singer.axm	12
VRS-100-Street-war.axm	12
VRS-080-Fountain.axm	11

AXMEDIS project

VRS-081-Falling-pillars.axm	11
VRS-091-Sealed-grocery-bag.axm	10
VRS-075-Glasses.axm	9
VRS-071-Crow-in-the-fridge.axm	8
VRS-089-Crazy-umbrella .axm	8
VRS-086-Fork.axm	8
VRS-084-Cake.axm	8
VRS-097-Gift-sack.axm	7
VRS-083-Cartoon.axm	5

2.4.4   Availability over the period

Demonstrator has been available 24/7 except for a very short period when high availability storage controller failed and storage needed manual redirection to backup unit.

AXMEDIS project

3   Annex 1

TEO Demonstrator Feedback Form

Q1. Your name (optional): ………………………………………………………………..
Q2. Type of user (check one):
o final user (consumer of content)
o business user (content producer, content aggregator, representative of collecting society, content distributor)
o technical user (technical expert)
o decision maker (who may decide to purchase AXMEDIS Tools)

Q3. Age Group:
o under 18
o 18-24
o   25-34
o 35-44
o 45-54
o over 54

Q4. How relevant is the demonstrator for you (please check one)?

o Very relevant
o Relevant
o Of some relevance
o Not relevant

Q5. How satisfied are you with the demonstrator (please check one)?

o Very satisfied
o Satisfied
o Moderately satisfied
o Not satisfied

Q6. How easy (or difficult) did you find the registration, installation and certification process (please check one)?
o Very easy
o Easy
o Difficult
o Very difficult

Q7. What is the most desirable single improvement which you would like to see?

Q8. Please add any further comments or feedback which you consider important here (optional):

Are you willing to provide us more feedback about your experiences with the AXMEDIS Tools? Then please provide your email address and telephone number and we will contact you:

[SUBMIT]

AXMEDIS project

4   Bibliography

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[4] DE12.2.4.2 AXMEDIS-ELTEO Content Modeling and Production

[5 Technical Note No. 6001 Video on Demand Distribution for IPTV Digital Set-Top-Box

[6] Technical Note No. 6501 Elion Content on Demand Distribution for PC

[6] AXMEDIS project website – www.axmedis.org

[7] Demonstrator web pages: general – www.axmedis.org/com

[8] Demonstrator web pages. TEO demonstrator:

   http://www.axmedis.org/com/index.php?option=com_content&task=view&id=72&Itemid=51

[9] Demonstrator web pages. Elion demonstrator:

   http://www.axmedis.org/com/index.php?option=com_content&task=view&id=75&Itemid=46

5   Glossary

AXCS, **AX**medis **C**ertifier and **S**upervisor
AXCS is the authority put in charge of supervising the certification process over all its phases

AXCP, **AX**medis **C**ontent **P**rocessing
Tools set for automatic content production, adaptation and protection of AXMEDIS object and their publication on a P2P environment.

AXDB, **AX**medis **D**ata**B**ase
Database for storing Axmedis objects

B
B2B, **B**usiness to **B**usiness
Refers to one business communicating with or selling to another.

I
IPTV, **I**nternet **P**rotocol **T**elevision
A system where a digital television service is delivered by using Internet Protocol over a network infrastructure

M
MPEG TS, **M**oving **P**icture **E**xperts **G**roup **T**ransport **S**tream
Communications protocol for audio, video, and data which is specified in MPEG-2 Part 1, Systems (ISO/IEC standard 13818-1).

P
P2P, **P**eer-to-**P**eer
Computer network which uses diverse connectivity between participants in a network and the cumulative bandwidth of network participants rather than conventional centralized resources where a relatively low number of servers provide the core value to a service or application

PMS, **P**rotection **M**anager **S**upport
A tool set for protecting/unprotecting Axmedis objects.

STB, **S**et **T**op **B**ox

AXMEDIS project

A device that connects to a television and an external source of signal, turning the signal into content which is then displayed on the television screen

V
VOD, **V**ideo **O**n **D**emand
Systems which allow users to select and watch video and clip content over a network as part of an interactive television system

W
WS, **W**eb **S**ervice
A software system designed to support interoperable Machine to Machine interaction over a network.

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