

SURFnet Video Portal

The next generation of streaming video
for research and higher education

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SURFnet

- The national computer network for higher education and research in the Netherlands

150 Member institutions

500.000 users

SURFnet 5: advanced network



Backbone: 10 Gbit/s

Client connections:
up to 1 Gbit/s

SURFnet Video Portal

- Combining the results of projects and other initiatives in a 'next generation **streaming video** environment'
 - Manuals and instructional content
 - Production
 - Distribution
 - Information retrieval
 - Online video editing and conversion tools

Use of streaming video

- **Rapid growth**
of the use of streaming material in higher education and research
- **Integration**
of streaming material in websites and online learning environments

SURFnet guide for producing streaming video

- Manual in PDF format
 - Production aspects (storyboards, recording and editing audio and video)
 - Publishing and distribution (on the internet)
 - Copyright issues
 - Examples



Production: source file

Use the highest possible quality!

MPEG-1

1.5Mb/s
(VHS quality)



1 hour
= approximately 675 MB



MPEG-2

consumer types:
6 to 8 Mb/s
(DVD quality)



1 hour
= 2700 to 3600 MB

Distribution: transcoding

Convert MPEG source file to other streaming media file types through web application

input formats

MPEG-1



MPEG-2



output formats

MPEG-1

MPEG-4


Real

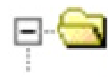
WMV /ASF




Quicktime

Transcoding tool: interface

 s/surfnet

 s/surfnet/mpeg

 s/surfnet/mpeg-2

   s/surfnet/mpeg-2/gigaman_MPEG-2.mpg

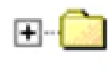
 s/surfnet/netshow

 s/surfnet/quicktime

 s/surfnet/real

 s/surfnet/transcoded

 s/surfnet/windowsmedia

 s/surfnet/xing

Transcoding tool: interface

Geselecteerd bestand:
Transcodering:

s/surfnet/mpeg-2/gigaman_MPEG-2.mp

	Naam	Beschrijving
<input type="checkbox"/>	MPEG1-VHS	MPEG1 high bandwidth (1.3 mbps)
<input type="checkbox"/>	MPEG2-DVD	MPEG2 high bandwidth (4.4 mbps)
<input type="checkbox"/>	MPEG2-SVP	MPEG2 SVP formaat (4 mbps)
<input type="checkbox"/>	MPEG4-DVD	MPEG4 high bandwidth (1.5 mbps)
<input type="checkbox"/>	MPEG4-VHS	MPEG4 high bandwidth (0.5 mbps)
<input type="checkbox"/>	QT-HIGH	Quicktime High Bandwidth (450 kbps)
<input type="checkbox"/>	QT-LOW	Quicktime Low Bandwidth (45 kbps)
<input type="checkbox"/>	QT-MED	Quicktime Medium Bandwidth (220 kbps)
<input type="checkbox"/>	QT-MPEG	Quicktime MPEG 4 codering (??? kbps)
<input type="checkbox"/>	RM-HIGH	RealMedia High Bandwidth (450 kbps)
<input type="checkbox"/>	RM-LOW	RealMedia Low Bandwidth (45 kbps)
<input type="checkbox"/>	RM-MED	RealMedia Medium Bandwidth (80/220 kbps)
<input type="checkbox"/>	WM-HIGH	Windows Media high bandwidth (450 kbps)
<input type="checkbox"/>	WM-LOW	Windows Media Low bandwidth (45 kbps)
<input type="checkbox"/>	WM-MED	Windows Media Medium bandwidth (80/220 kbps)

Transcode file

Distribution: Storage of streaming files

SURFnet streaming servers with file management environment

- Windows Media
- Real media
- Quicktime
- MPEG streaming server:
Kasenna Mediabase XMP
 - MPEG-1
 - MPEG-2
 - MPEG-4



MPEG-4

- 5 Kb/s - 100 Kb/s:
Videophone
- 100 Kb/s – 1,5 Mb/s:
Internet streaming
- 10 Mb/s – 100 Mb/s:
Studio
- 100 Mb/s:
digital Cinema



ISO MPEG-4 vs ISMA MPEG-4

Interactive streaming video

[Example: MPEG-4 with Envivio and Realplayer](#)

[Example: MPEG-4 with Envivio and Quicktime player](#)



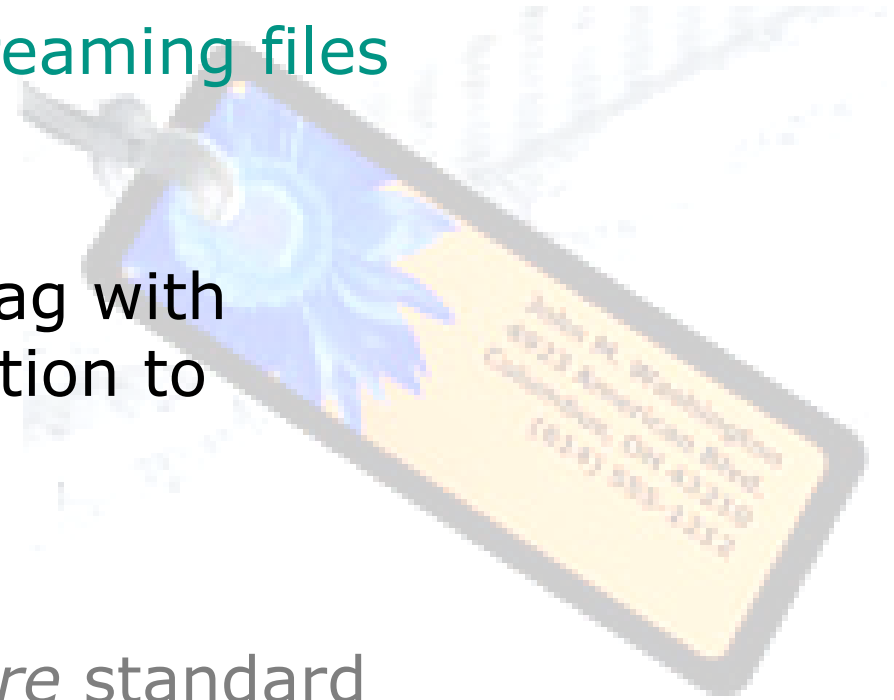
Information retrieval:

Search and browse facilities

- Not easy to find streaming files
- Solution:
attach **metadata** tag with
descriptive information to
streaming file

based on

Qualified Dublin Core standard



Information retrieval:

Qualified Dublin Core Metadata model

Title

Title.Alternative

Creator

Subject

Description

Description.Abstract

Publisher

Contributor

Language

Relation

Coverage.Spatial

Coverage.Temporal

Rights

Date.Created

Date.Valid

Date.Available

Date.Issued

Type

Format.Extent

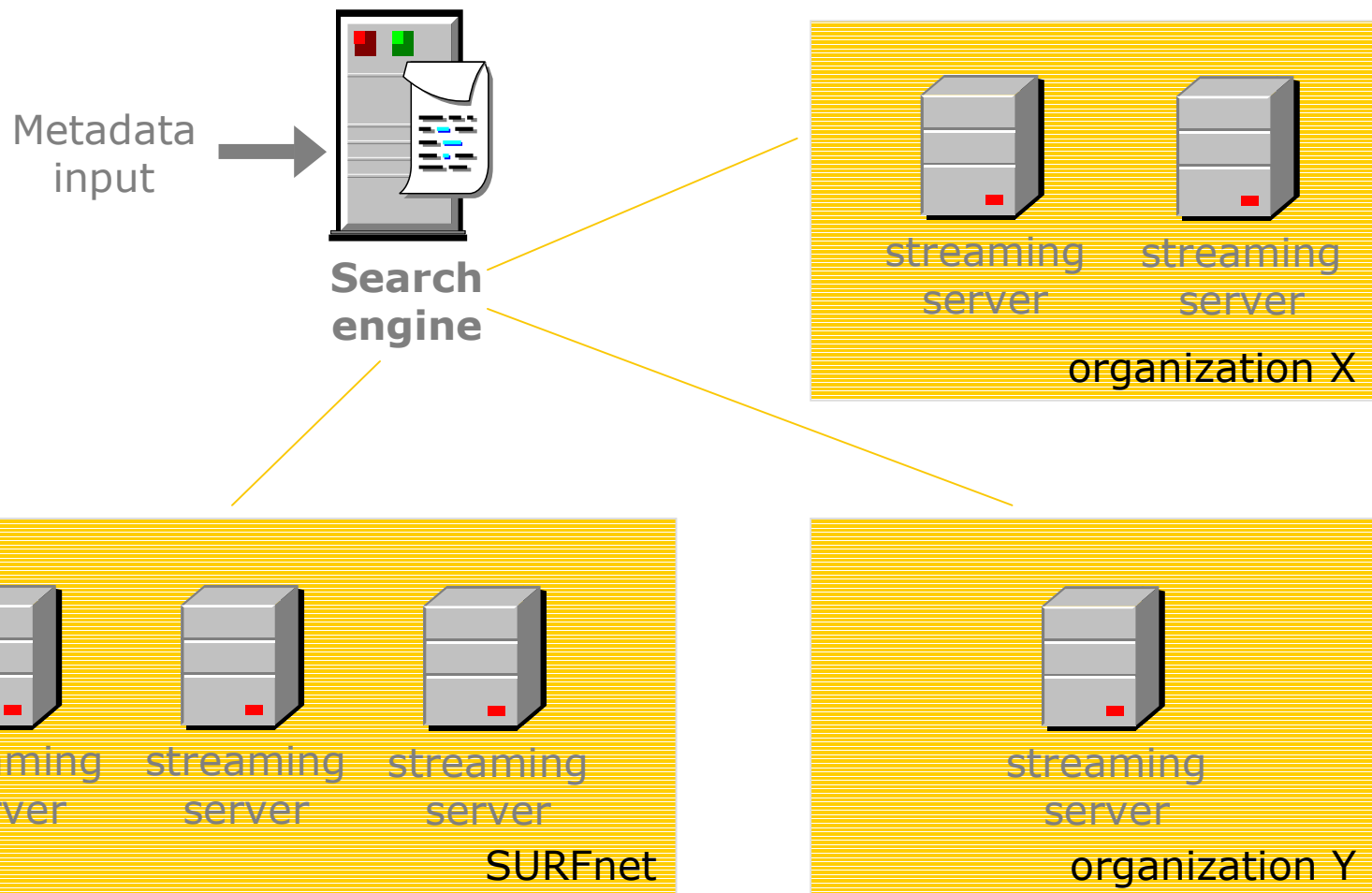
Format.Medium

Identifier

Source

Element printed in green are required fields

Information retrieval: Search engine



Information retrieval: end user web interface

Browse for collections, page 1

Sort by

NEW Collectie van Rosendaal
3 assets
Available

NEW Digitalenklas
4 assets
Available

NEW Fontys Mediatheek website
1 asset
Available

Search & browse

- Advanced asset search
- Collection browse

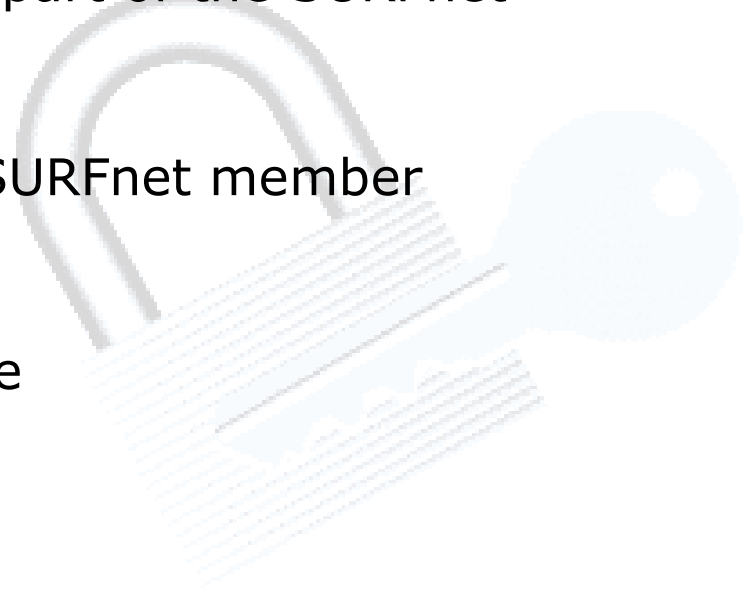
Search for assets, page 1

-

Sort by

File protection

- Authentication layer to make streaming files only available to selective user group:
Hostname based authentication
(no need to distribute username – password to end-users)
 1. File is only available to one or more organizations that are part of the SURFnet community.
 2. File is available to all SURFnet member organizations
 3. File is publicly available (no file protection)



File protection: Admin interface

File name External file
Current file: **gigaman_MPEG-2.mpg**
 Overwrite

Format ▾

MPEG profiles ▾

Protection Users from SURFnet connected organizations
 Whole SURFnet network
 Inherit from specific collection
 Everybody / External file

Hosts

This media file is available to the following hosts:

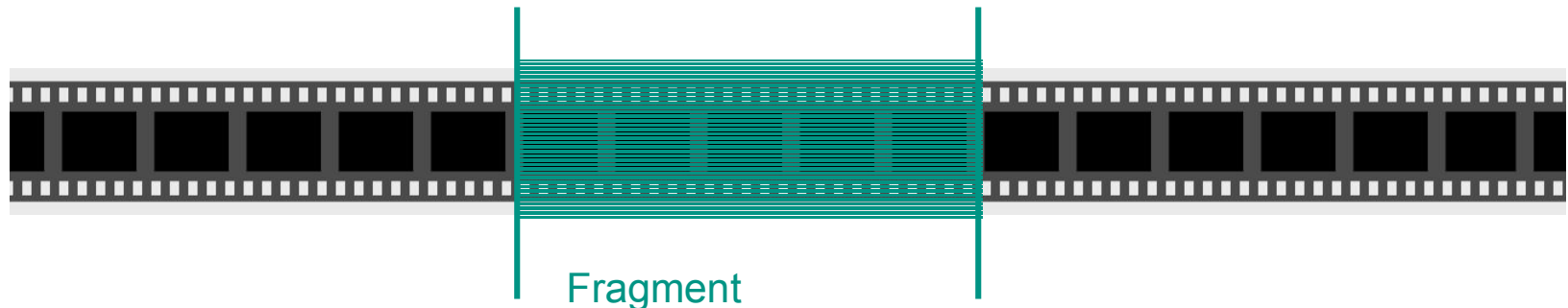
- utwente.nl - Universiteit Twente
- uu.nl - Universiteit Utrecht
- uva.nl - Universiteit van Amsterdam
- uvh.nl
- uvt.nl - Universiteit van Tilburg
- v2.nl
- vhall.nl - Van Hall Instituut
- vhto.nl
- vsnu.nl - VSNU
- vtenl.nl - Vakopleiding Transport en Logistiek
- vtl.nl
- vu.nl - Vrije Universiteit
- vumc.nl

Example of file protection end user screen

Mediabestanden	Bitrate (Kbps)	Tijdsduur	
	2256.4	00:11:05	MPEG1 
	 6648	00:11:11	MPEG2 

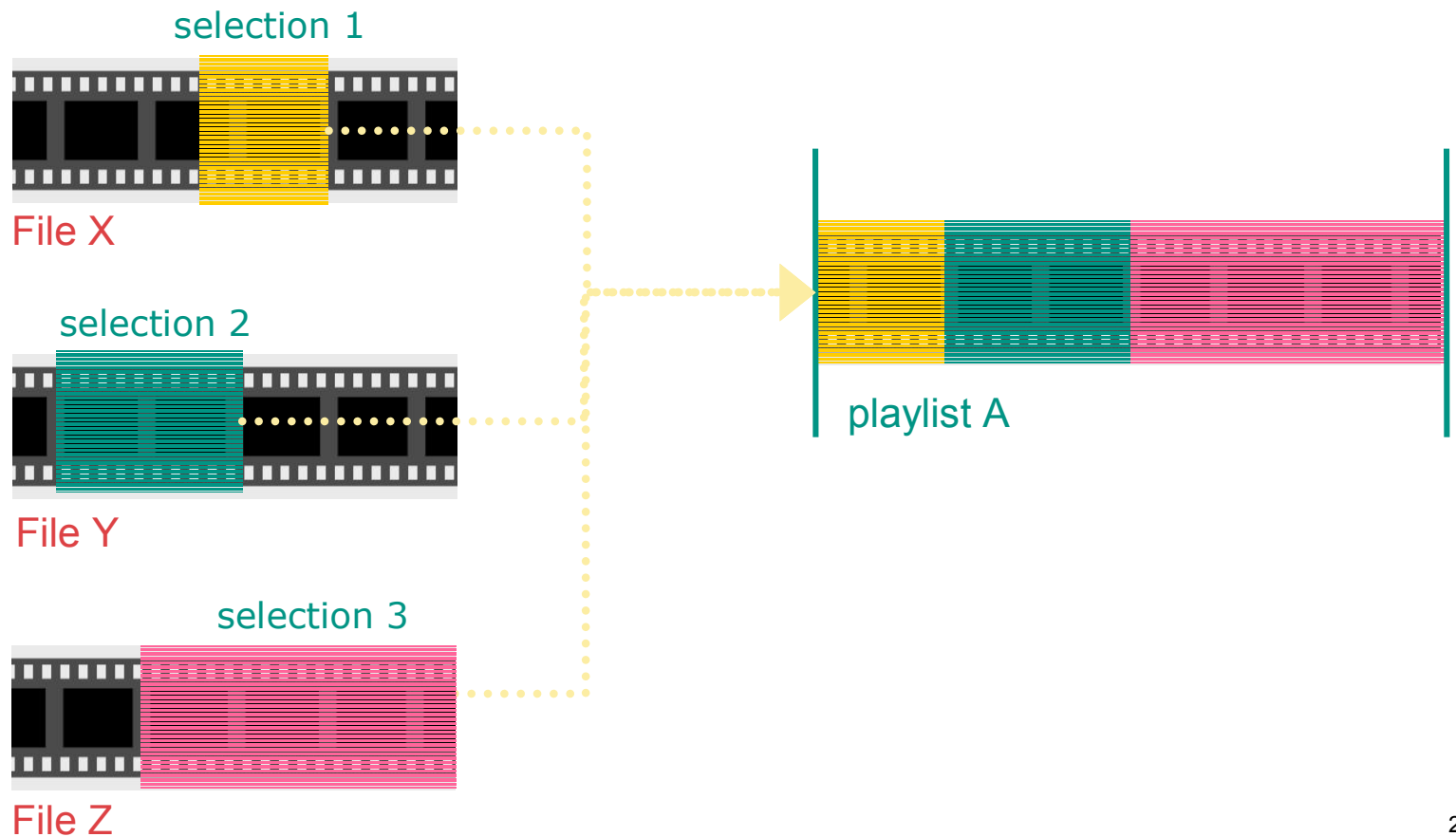
Editing tool: selection

- Select part of file
- Reference to the selection in the original file



Editing tool: playlists

- Combine several streaming fragments into one stream



Editing tool: interface

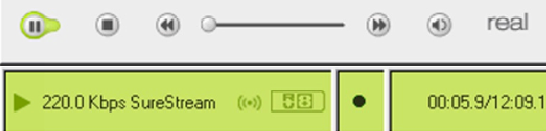
De Virtuele Snijmachine

Maak hier de gewenste selectie uit het bestand.

Meer informatie:

[Hulp bij het maken van de uitsnede](#)

Bestand: /s/surfnet/real/tnc2003.rm



Beginpunt

Markeer begin

0 min. 0.000 sec.

- 0,1 s

+0,1 s

Handmatig...

Speel vanaf

Eindpunt

Markeer eind

0 min. 0.000 sec.

- 0,1 s

+0,1 s

Handmatig...

Speel vanaf

Dit fragment

Speel fragment in apart venster

Open venster met resultaten

Metadata...

Opties...

Opslaan als...

Speellijst

De speellijst bestaat uit 0 fragmenten
Titel van fragment:

Voeg fragment toe aan speellijst

Bewerk speellijst

Kies volgend bestand

Editing tool: interface

Kopieer een van onderstaande tekstvelden om uw selectie in een ander bestand af te kunnen spelen.

Meer informatie: [Selectie hergebruiken](#)

Hyperlink

[Speel fragment](#)

URL

http://www.surfnet.nl/play.php/force_real ram?url=/s/surfnet/real/gigaport/Gigaport.rm&start=188.179&end=320.119

HTML - externe speler

```
<a href = "http://www.surfnet.nl/play.php/force_real ram?url=/s/surfnet/real/gigaport/Gigaport.rm&start=188.179&end=320.119">Speel fragment</a>
```

HTML - geïntegreerde speler

```
<OBJECT ID="RealPlayer" CLASSID="clsid:CFCDA03-8BE4-11cf-B84B-0020AFBCCFA"
HEIGHT = "390" WIDTH = "360">
<param name="SRC" value="http://www.surfnet.nl/play.php?
url=/s/surfnet/real/gigaport/Gigaport.rm&start=188.179&end=320.119">
<param name="AUTOSTART" value="FALSE">
<param name="CENTER" value="FALSE">
<param name="IMAGESTATUS" value="TRUE">
<param name="LOOP" value="FALSE">
<param name="MAINTAINASPECT" value="TRUE">
<param name="NOJAVA" value="TRUE">
<param name="NUMLOOP" value="">
<param name="SHUFFLE" value="FALSE">
<param name="CONTROLS" value="ImageWindow,ControlPanel,StatusBar">
<embed NAME="RealPlayer"
SRC=http://www.surfnet.nl/play.php?
url=/s/surfnet/real/gigaport/Gigaport.rm&start=188.179&end=320.119
type="audio/x-pn-realaudio-plugin"
HEIGHT = "390"
WIDTH = "360"
AUTOSTART = "FALSE"
CENTER = "FALSE"
IMAGESTATUS = "TRUE"
LOOP = "FALSE"
MAINTAINASPECT = "TRUE"
NOJAVA = "TRUE"
NUMLOOP = ""
SHUFFLE = "FALSE"
CONTROLS = "ImageWindow,ControlPanel,StatusBar">
</OBJECT>
```

Portal website

<http://video.surfnet.nl>

<http://videosearch.surfnet.nl>

SURFnet SURFnet Video Portal beta-test

Openbare info SURFnet Video Portal Modified - 21 Feb 2003

Welkom bij de SURFnet Video Portal beta-test

De SURFnet Video Portal is een *videotheek op internet* voor de instellingen uit het hoger onderwijs en onderzoek in Nederland. De portal biedt een opslagplaats voor audio- en videomateriaal en dient als uitzendstation. Daarbij wordt gebruik gemaakt van een techniek die *streaming* wordt genoemd. Met de zoek- en bladerfuncties kan snel naar bestanden worden gezocht.

De portal ondersteunt vele afspelformaten, in kwaliteiten variërend van 'postzegelformaat' tot schermvullende DVD resolutie. Voor gebruikers die zelf materiaal willen produceren, bewerken of distribueren, biedt SURFnet ondersteunende voorzieningen.

Momenteel is de streaming omgeving in een **beta-test stadium**. Deze website biedt informatie voor beta-testers en andere geïnteresseerden.

Eindgebruikers voorzieningen	Tools voor productie en distributie
Naar de video collectie van de SURFnet Video Portal	Log in op de beheeromgeving
Afspeelsoftware voor het bekijken van streams van de SURFnet Video Portal	Veelgestelde vragen over het gebruik van de portal
	Virtuele snijmachine voor het maken van uitsneden

Naar de video collectie

[Zoek en blader in de SURFnet Video Portal](#)

Laatste nieuws

SURFnet Video Portal

MPEG-4 streaming files starten nog niet automatisch op wanneer in de portal op een link wordt geklikt. Deze functionaliteit zal in de week van 17 maart beschikbaar komen.

Extern nieuws

- [Apple pushing for MPEG-4 copy protection](#)
- [Apple adds DRM to MPEG-4](#)

SURFnet Homepage

Openbare info SURFnet Video Portal Modified - 02 Apr 2003 9:44 PM

Search & browse

Asset search

- Advanced asset search
- Collection browse

Download media players

Select

Help

help

English

Random asset

Surprise

New assets

 - testmovie
 - Test
 - Test 2
 - Test Asset from Kasenna
 - Milonga dei Angel
 - 01 Patsy
 - grid computing documentaire
 - IGrid2002 clip
 - mpeg-4 test: zillion.mp4 80 kb...
 - mpeg-4 test: zillion.mp4 28 kb...

Popular assets

 - Een verzameling testfiles
 - Kasenna test
 - GigaMAN
 - Jeugdjournaal test
 - NOVA
 - testmovie
 - test volendam
 - Bartek Test

TF-Netcast



- **TF-Netcast Task Force**
Creation of a portal for live-streaming announcements
Possible extension of the portal to an academic channel for live-streams and video-on-demand.
<http://www.terena.nl/tech/task-forces/tf-netcast/>
- **TF-Netcast questionnaire**
<http://www.esurvey.dk/surveys/A2NTPZ>



- <http://video.surfnet.nl>
- <http://videosearch.surfnet.nl>
- [Editing tool V2](#)
- <http://www.terena.nl/tech/task-forces/tf-netcast/>
- <http://www.esurvey.dk/surveys/A2NTPZ>