



IBM Spectrum Scale Experten Workshop

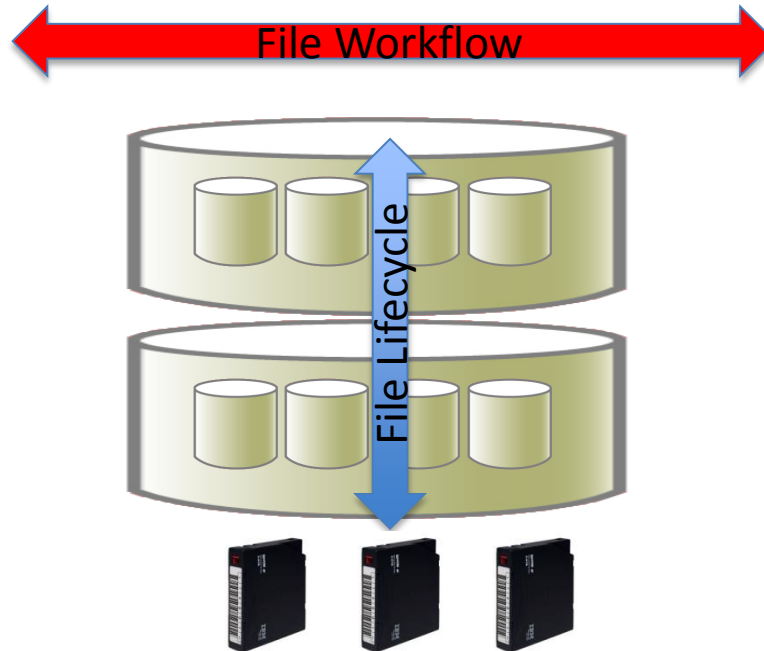
FILE WORKFLOW MIT AREMA



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File Workflow....





...mit AREMA





IBM Archive and Essence Manager (AREMA)



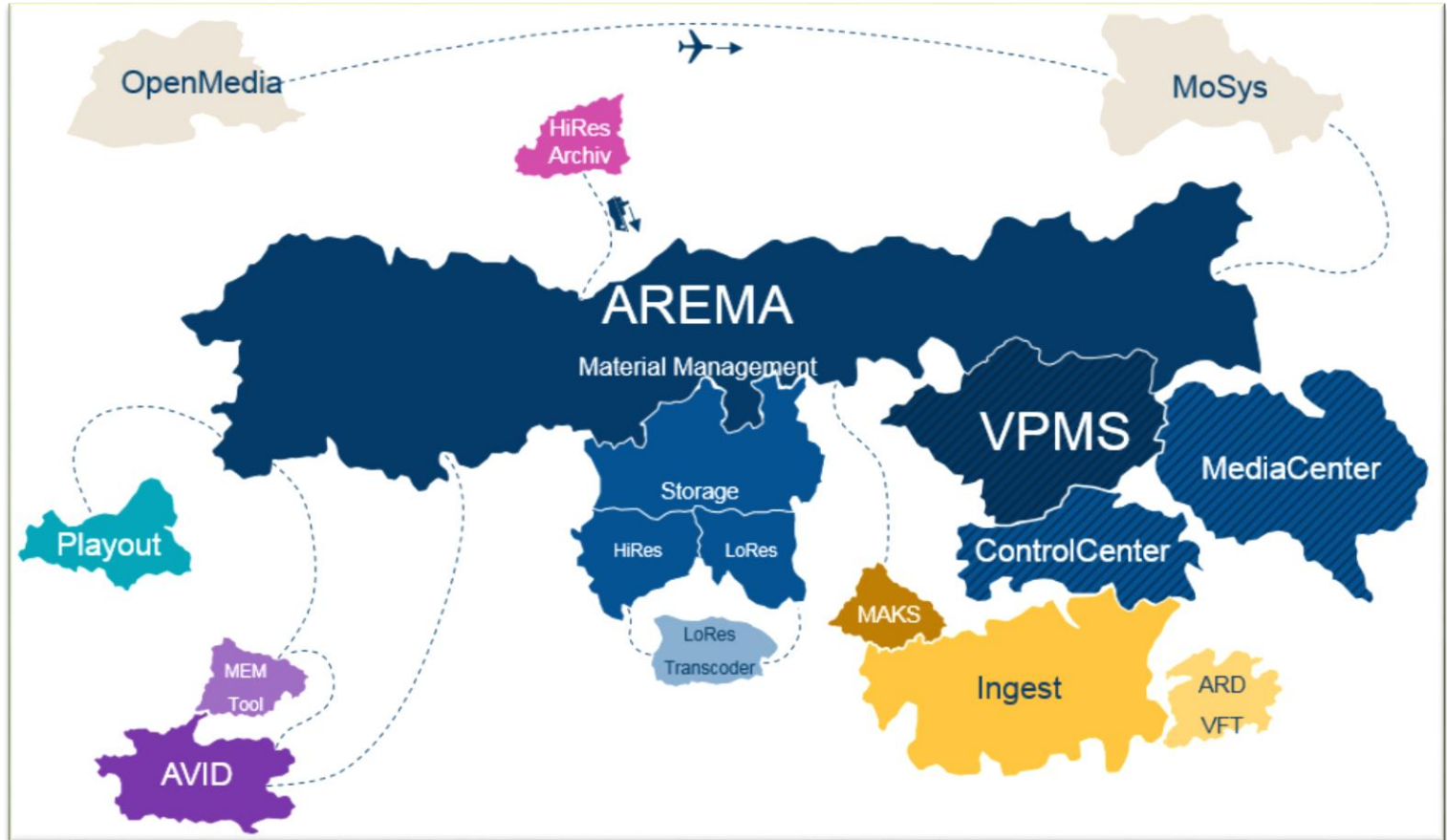
- AREMA is a highly approved media industry solution, used in many TV networks. Especially in Germany, there is a very high market coverage.
- AREMA has a strong storage background, manages long-term video-archives at WDR, ARTE, RTL, ProSiebenSat1, SRF and ORF.
- Workflow Orchestration of media data-centered processes.
- More than 140 media functions / services used to transport, transform, analyze and manipulate media data.
- Orchestrates external systems e.g. transcoder or IBM picture recognition software IMARS.
- AREMA as a middleware and integrational software – links different media systems, works as a bridge between (legacy) media systems.
- AREMA is a flexible solution, being able to provide its core competencies (workflow orchestration, media services, interfaces, simple expandability) to other industries that are processing media data.
- IBM AREMA media portal: media portal as an extension of AREMA for intuitive search, sighting and consolidation of media; downstream workflows (such as exports) are possible.



Customers who decided for AREMA

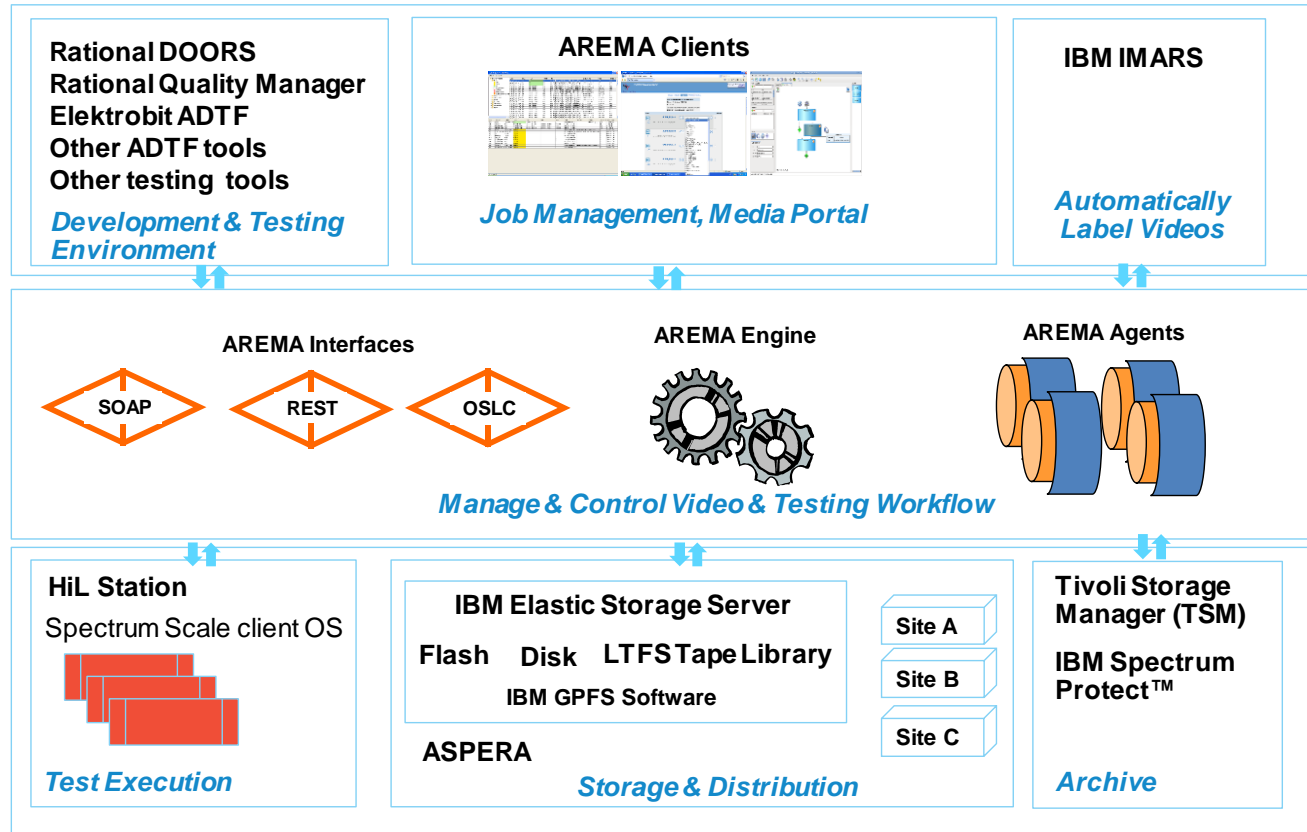


AREMA beim WDR



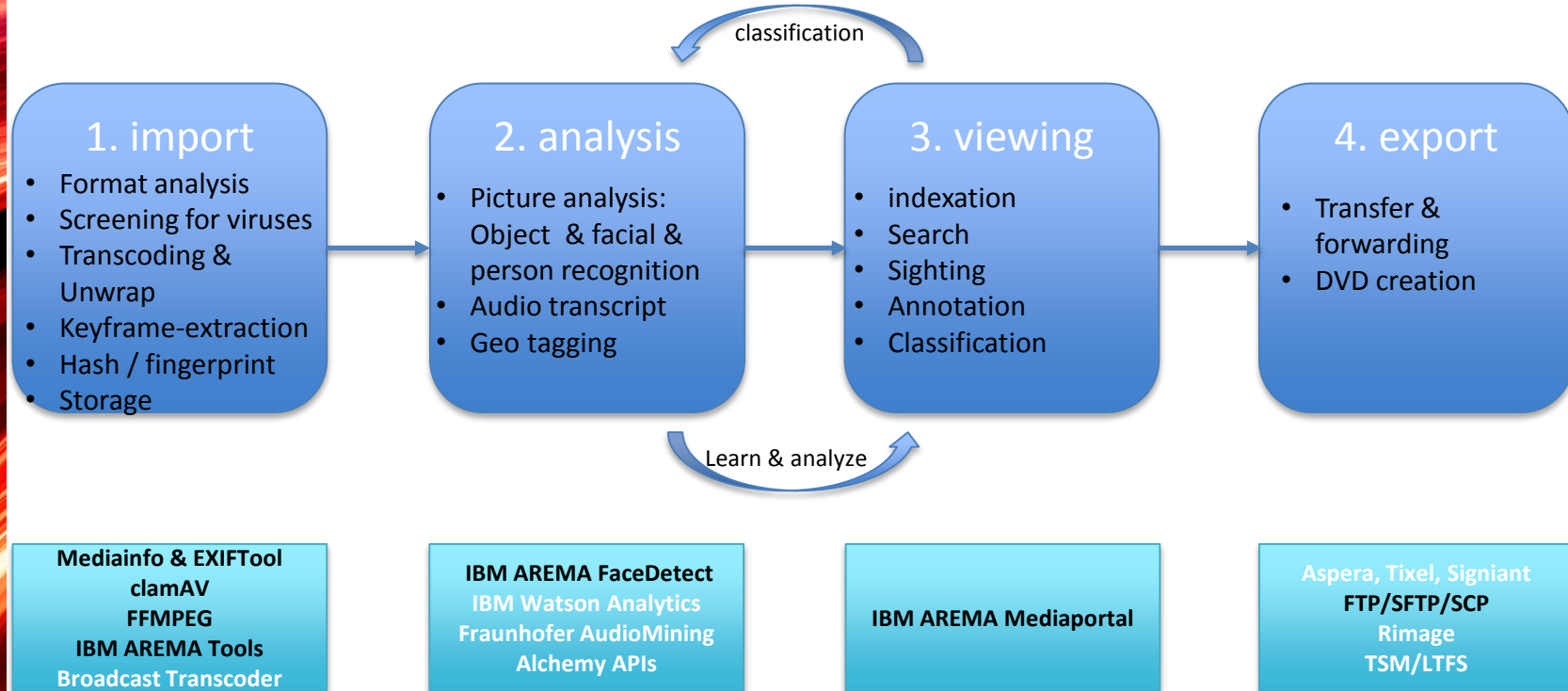


Im Automobilbereich: AREMA zum Management der Testvideos für die Tests zum Autonomen Fahren





AREMA im Sicherheitsbereich als “Forensisches Multimediaportal”



Workflow orchestration (IBM AREMA)



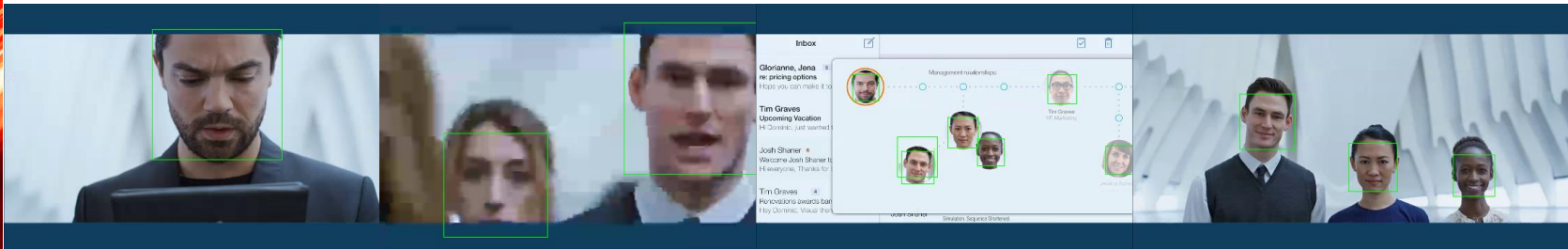


AREMA im Sicherheitsbereich als “Forensisches Multimediaportal”

Gesichtserkennung mit OpenCV



- AREMA has, besides a scene-based key frame extraction, an own face recognition based on OpenCV
- Faces are tagged in pictures. Those single pictures will then be extracted from the videos. Those serve for a faster navigation in the video, in line with the scene based key frames.
- Soon, a person recognition will be added. Then, to each face a FID (Face Identifier) will be assigned. Since those will be indexed in the portal, a search based on a face within the whole picture, respectively video archive is possible.
- The person recognition is trainable by addition of external pictures, for example a picture data base.





AREMA im Sicherheitsbereich als “Forensisches Multimediaportal”

- Recently, the Fraunhofer Audiominig Tool was integrated in AREMA.
- AREMA extracts the audio track from different video formats and transcribes each sentence via Audiominig (Speech-To-Text).
- The spoken word will be indexed in the portal and enables the user to search directly for a specific word with the exact link to the video scene.

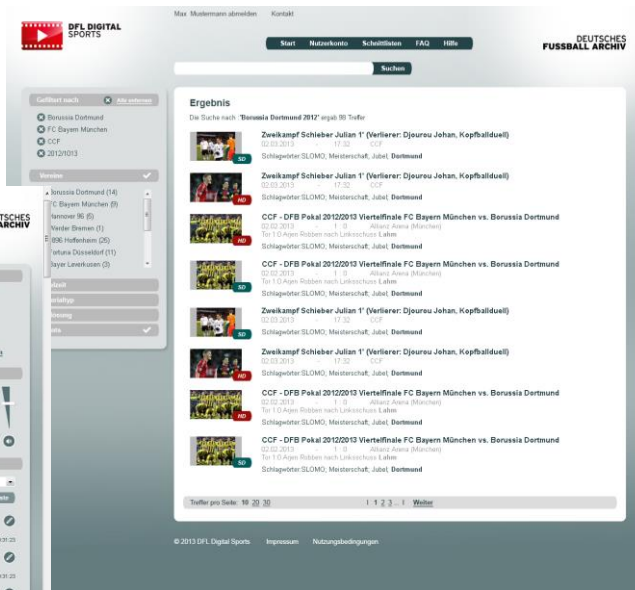
Integration mit Fraunhofer Audio Mining



```
{"segments": [  
  ...  
  {  
    "segmentNumber": 1,  
    "startTime": 4480,  
    "duration": 3190,  
    "endTime": 7670,  
    "speaker": 1,  
    "gender": "female",  
    "transcript": "Hier ist das erste deutsche Fernsehen mit der Tagesschau."  
  },  
  ...  
  {  
    "segmentNumber": 20,  
    "startTime": 238980,  
    "duration": 23620,  
    "endTime": 262600,  
    "speaker": 2,  
    "gender": "male",  
    "transcript": "Großbritannien raus aus der Europäischen Union für viele  
unvorstellbar das weiß auch der britische Premierminister Cameron und er nutzt es um  
die EU Partner unter Druck zu setzen entweder das Staatenbündnis ist zu Reformen  
bereit oder bei der geplanten Volksabstimmung über die EU Mitgliedschaft droht ein  
Nein heute hatte EU Ratspräsident Tosca ein Kompromisspapier vorgelegt dass die  
Briten besänftigen soll."  
  },  
  ...  
  ]  
}
```

AREMA im Sicherheitsbereich als “Forensisches Multimediaportal”

Media Portal am Beispiel DFL





File inspection (malware analysis etc)





Speichermanagement mit Metadaten aus der Ölindustrie





AREMA Functional Overview

Watch-folder FIMS ... Avid Quantel VACP

Interfaces

Jobs Agents Essences Upload Dashboard Player

Clients

SOAP REST

Job Templates **API** Notifications

Queue Mgmt Resource Mgmt **Job Engine** Statistics Rules

Agents (full implementation) Agents (adapters) Storage Management

.....-130+ agent implementations-.....

Disk TSM LTFS FPD Diva Cloud



AREMA Media Portal branded layout



DFL DIGITAL SPORTS

Max Mustermann abmelden Kontakt

Start Nutzerkonto Schnittlisten FAQ Hilfe

DEUTSCHES FUSSBALL ARCHIV

Suchen

Ergebnis

Die Suche nach **Borussia Dortmund 2012** ergab 98 Treffer

- Zweikampf Schieber Julian 1' (Verlierer: Djourou Johan, Kopfballduell)**
02.03.2013 - 17:32 CCF
Schlagwörter: SLOMO, Meisterschaft, Jubel, Dortmund
- Zweikampf Schieber Julian 1' (Verlierer: Djourou Johan, Kopfballduell)**
02.03.2013 - 17:32 CCF
Schlagwörter: SLOMO, Meisterschaft, Jubel, Dortmund
- CCF - DFB Pokal 2012/2013 Viertelfinale FC Bayern München vs. Borussia Dortmund**
02.02.2013 - 1:0 Allianz Arena (München)
Tor 1:0 Ajzen Robben nach Linkschuss L. Lahm
Schlagwörter: SLOMO, Meisterschaft, Jubel, Dortmund
- CCF - DFB Pokal 2012/2013 Viertelfinale FC Bayern München vs. Borussia Dortmund**
02.02.2013 - 1:0 Allianz Arena (München)
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Tor 1:0 Ajzen Robben nach Linkschuss L. Lahm
Schlagwörter: SLOMO, Meisterschaft, Jubel, Dortmund

Teufel pro Seite: 10 20 30 | 1 2 3 -1 Weiter

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DFL DIGITAL SPORTS

Max Mustermann abmelden Kontakt

Start Nutzerkonto Schnittlisten FAQ Hilfe

DEUTSCHES FUSSBALL ARCHIV

Suchen

1 - CCF - 1. BL 2012/2013 24. ST Borussia Dortmund vs. Hannover

00:00:00

Pause Play Frame Fast f. Slow Motion

Aktuell 00:00:00:00 Inpoint 00:00:03:16 Outpoint 00:05:03:06 Länge 00:05:11:58

In Schnittliste

Keyframe Events

Informationen zum Clip

DFB Männer Nationalmannschaft
WM Qualifikation
26.03.2013
Deutschland - Kasachstan
HD 16:9

Zurück zu den Sicherungslisten

Audiokommentar

- Shadengeräusche
- Stereo rechts
- Stereo links
- Platzmikrofon

Clips: 3 (09:00:12:33)

Schnittliste Schnittliste

Neue Liste

- 1 - CCF - 1. BL 2012/2013 24. ST Borussia Dortmund vs. Ha
In 15:17:50:26 Out 15:17:50:10 Länge 00:00:31:23
- 2 - CCF - 1. BL 2012/2013 24. ST Borussia Dortmund vs. Ha
In 15:17:50:26 Out 15:17:50:10 Länge 00:00:31:23
- 3 - CCF - 1. BL 2012/2013 24. ST Borussia Dortmund vs. Ha
In 15:17:50:26 Out 15:17:50:10 Länge 00:00:31:23

Speichern Bestellen

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AREMA Media Portal standard layout



The screenshot shows the IBM AREMA Portal search results for the term "flower". The interface includes a navigation bar at the top with various menu items like Home, Upload, Media Search, and Dashboard. Below the navigation bar, there's a search bar and a filter sidebar on the left. The main content area displays a list of search results, each with a thumbnail image, a title, and a brief description of the video's content and metadata.

IBM AREMA Portal

Home Upload Media Search Media Order Dashboard Dashboard Map Dashboard Agents Dashboard Load Job Essences Factory Audit Search Rules Agents Device System Users Portal Toolkit ToolNew Upload HDA

AREMA Search

flower

Filtered by: Essential

No filters active

Group Type: file (16), video (230)

Group Title

Essence Type

Essence Organism

Essence Video Code

Essence Video Resolution

Essence Video FrameRate

Event Type

Result

Sort by: relevance descending

Search for "flower" returned 136 results

- flower_test**
VR Label: flower=70% [Flower: Scene=6%, Nature: Scene=37%, Antiproduct=56%, Invertebrate=56%]
from 00:18 to 00:24
- flower_upload**
VR Label: flower=70% [Flower: Scene=6%, Nature: Scene=37%, Antiproduct=56%, Invertebrate=56%]
from 00:18 to 00:24
- flower_test**
VR Label: Invertebrate=60% [People: Activity=63%, Amphibian=62%, Scene=52%, Flower: Scene=51%]
from 00:30 to 01:07
- flower_test**
VR Label: flower=67% [Green=60%, Scene=43%, Outdoors=42%, Fabric=54%]
from 01:07 to 01:14
- flower_test**
VR Label: fish=72% [Flower: Scene=6%, Animal=60%, Food=60%]
from 00:35 to 00:42
- flower_upload**
VR Label: Invertebrate=60% [People: Activity=63%, Amphibian=62%, Scene=52%, Flower: Scene=51%]

The screenshot shows the IBM AREMA Portal video player interface. The main video player displays a scene of a field with many red flowers. The player includes standard video controls like play, pause, and volume. On the right side, there's a sidebar with "Clip Information" and "Audio tracks preview". The "Clip Information" section shows the clip name "flower_test" and its duration. The "Audio tracks preview" section shows a list of audio tracks, with "Video stream sound" selected. Below the video player, there's a progress bar and a "To Clipset" button.

IBM AREMA Portal

Home Upload Media Search Media Order Dashboard Dashboard Map Dashboard Agents Dashboard Load Job Essences Factory Audit Search Rules Agents Device System Users Portal Toolkit ToolNew Upload HDA

AREMA Video Player

flower_test

Clip Information

flower_test
00:00:18.07
1280x720
25
Back

Audio tracks preview

- Video stream sound
- Audio stream 1
- Audio stream 2

Clips

New Schriftstate

New List

flower_test

In- 0:00:24.10 Out: 0:00:18.07 Length: 00:06.02

To Clipset

Current: 0:00:18.07 Input: 0:00:16.07 Output: 0:00:24.10 Length: 00:06.02

In Out To Clipset



AREMA Job Monitor – Step Details



Auto Refresh is ON — Filter Criteria: Job State = running | Job IDs : Last 200 | Other : Show jobs for my orgunits

Actions	Job ID	Name	Status	Priority	Eff. Prio	Title	Creation	Duration	User ID
	22143	wdr_20000101_010101_B350_ZAP_20130628_122827_F008_Create_Proxy_WHILE	running	500	532	[22141] Erzeuge Proxy zu File-ID [ZAP_20130628_122827_F008] MO-ID [wdr_20000101_010101_B350] fuer Projektname [ohne_Auftrag] Beitragstitel [ohne_Auftrag]	2013-06-28 12:28:57.688	running...	zapadmi n
	22142	wdr_20000101_010101_B350_ZAP_20130628_122827_F008_Export_Avid_WHILE	30%	500	532	[22141] Export zu Avid von File-ID [ZAP_20130628_122827_F008] MO-ID [wdr_20000101_010101_B350] fuer Projektname [ohne_Auftrag] Beitragstitel [ohne_Auftrag]	2013-06-28 12:28:57.682	running...	zapadmi n

Step Name	Agent	Status	Begin	End	Duration	Title	Agent	Agent Server
export_amt	edi_avid_amt#nrw	running	2013-06-28 12:29:10.268			Write file via AMT to ISIS as [Spass Aufzeichnung_03] in [\\dfs\svl\WSP\Avid MediaFiles\MXF\AMT-ZAP]	9186	duslczap11.wdr.de
create_folder_interplay	edi_avid_interplay#nrw	finished successfully	2013-06-28 12:29:05.484	2013-06-28 12:29:06.078	00:00:00.59	Create folder in Interplay	9181	duslczap11.wdr.de
notify_amt_format	notify#nrw	finished successfully	2013-06-28 12:29:01.282	2013-06-28 12:29:01.578	00:00:00.29	Create XML config file for AMT format description	9245	duslczap11.wdr.de
notify_interplay_create_folder	notify#nrw	finished successfully	2013-06-28 12:29:01.272	2013-06-28 12:29:01.496	00:00:00.22	Create XML config file for Interplay checkin	9174	duslczap11.wdr.de
<pre> notify_interplay_create_folder ├─function "notify#nrw" │ └─title "Create XML config file for Interplay checkin" │ └─dest_filename "/home/zapadmiira/adminira/etc/WDR_TV2015_Notify_Avid_Folder_Destination.xml" │ └─target_filename_list "zap/h/wdr_20000101_010101_B350/ZAP_20130628_122827_F008_avid_folder.xml" │ └─fail_on_predecessor_error "yes" │ └─fail_on_error "yes" │ └─stop_deliver_on_failure "yes" │ └─hold_in_cache "no" │ └─org_unit "zapdus" ├─parameters properties │ └─xml_filename "zap/h/wdr_20000101_010101_B350/ZAP_20130628_122827_F008_avid_folder.xml" │ └─avid_folderURI "Interplay://dsavid/workgroup/Projects-ZAP/andere Redaktion/ohne_Auftrag/Überspielungen/" │ └─rc "0" │ └─begin_time "2013-06-28T12:29:01.272+0200" │ └─end_time "2013-06-28T12:29:01.496+0200" │ └─state "10" └─ </pre>								
notify_interplay_metadata	notify#nrw	runnable				Create XML config file for Interplay checkin	0	duslczap11.wdr.de
set_metadata_interplay	edi_avid_interplay#nrw	runnable				Set metadata in Interplay	0	duslczap11.wdr.de
headframe_grep	external_command#nrw	runnable				Extrahiere Headframe	0	duslczap11.wdr.de
notify_interplay_headframe	notify#nrw	runnable				Notifikation fuer Interplay zum Setzen von Headframe	0	duslczap11.wdr.de
set_interplay_headframe	edi_avid_interplay#nrw	runnable				Headframe in Interplay setzen	0	duslczap11.wdr.de
eoj	end_of_job#nrw	runnable				[22141] Export zu Avid von File-ID [ZAP_20130628_122827_F008] MO-ID [wdr_20000101_010101_B350] fuer Projektname [ohne_Auftrag] Beitragstitel [ohne_Auftrag] Redaktion [] Sendung [] Sendedatum []	0	duslczap11.wdr.de

	22141	wdr_20000101_010101_B350_ZAP_20130628_122827_F008_Import_DVS_WHILE	50%	500	532	Import von [DVS-DUS-3-FTP] File [Spass Aufzeichnung_03.mxf] fuer Projektname [ohne_Auftrag] Beitragstitel [ohne_Auftrag] Redaktion [] Sendung [] Sendedatum []	2013-06-28 12:28:27.655	running...	zapadmi n
	22140	wdr_20000101_010101_B350_ZAP_20130628_120001_F007_Export_...	30%	500	542	[22136] Export zu Avid von File-ID [ZAP_20130628_120001_F007] MO-ID [wdr_20000101_010101_B350] fuer Projektname [ohne_Auftrag] Beitragstitel [ohne_Auftrag]	2013-06-28 12:00:35.533	running...	zapadmi n



AREMA Job Monitor – Essenz Details



AREMA Job Display

Auto Refresh is ON --- Filter Criteria: Job IDs : Last 200 | Other : Show jobs for my orgunits --- Jobs found : 200

page 1 of 2

Actions	Job ID	Name	Status	Priority	Eff. Prio	Title	Creation	Duration	User ID
	2714916	Ordner_Mangas_B_HUH_AOU1	finished successfully	700	701	Erzeugung der Ordner fuer Projekt [Mangas_B_HUH_AOU1] ZAP Kürzel [AOU1] bzw MO-ID [wdr_20141028_170056_B_AOU1] auf [Venice DVS-DUS-1-FTP DVS-DUS-2-FTP DVS-DUS-3-FTP DVS-DUS-4-FTP] und [Avid Interplay-dus] fuer Redaktion [Hier und Heute] Beitragstitel [Mangas]	2014-10-28 17:00:57.371	00:00:47.86	mosys
	2714915	Notify_VPMS_B_AKS_AKT					2014-10-28 17:00:49.024	00:00:07.89	arema
	2714914	Export_Avid_B_AKS_AKT					2014-10-28 17:00:32.646	running...	arema

Essence Details

Additional information for essence zap/dus/hi/wdr_20141028_113128_B_AORW/ZAP_20141028_165952_F910.mxf

general

Property	Value
filesize	183820704
extension	mxf
mime_type	application/mxf
file_format	MXF
tracks	2

variable

Property	Value
Sendungstitel	Aktuelle Stunde
Sendedatum	2014-10-28T00:00:00
Herkunftskennung	Überspielungen
Quelle	ControlCenter SDI-Ingest
MO-ID	wdr_20141028_113128_B_AORW
File-ID	ZAP_20141028_165952_F910
MediaInfo_Complete_name	/home/zapadmira/admira/cache/zap/dus/hi/wdr_20141028_113128_B_AORW/ZAP_20141028_165952_F910.mxf
MediaInfo_Format	MXF
MediaInfo_Commercial name	IMX 50

OK

	Agent ID	Agent Server
Interplay Clips/Aktuelles w [t]	54453	duslxzap02
MS erzeugen	54462	duslxzap01
ng-Eckart] in es\VMXF\TAG301]	54164	duslxzap03

2-03 Avid-Amt-DUSMSZAP03-01 Avid-Amt-



AREMA File Upload



AREMA File Upload - IBM

MO-ID Beitrag

Redaktion	6329
Sendung	D Lokalzeit aus Duesseldorf
Beitragsname	Alter Zoo Ddorf
Redakteur	
Autor	Hoffmann, Jens
Sendedatum	23.11.2013
Project Name	Alter_Zoo_Ddorf_B_LZ__DUE

Name of Sequence

Type of Material

Remarks

FTP Upload in Process 100% finished

Arema Import Job [199657](#) running

Types of Source **XDCAM** P2 File

FTP Upload Progress per File

100% <small>finished</small>	C:\Clip\C0020.MXF
100% <small>finished</small>	C:\Clip\C0021.MXF
100% <small>finished</small>	C:\Clip\C0022.MXF
100% <small>finished</small>	C:\Clip\C0023.MXF
100% <small>finished</small>	C:\Clip\C0024.MXF



AREMA Human Task Workflows



Extension of AREMA 's workflow capabilities now include human task workflows

Human interaction is possible via Task Lists

- Users can search or select to view all submitted/closed tasks
- Users can select a task to open and fill out

Creation Date	Priority	Title	User	Group	Orgunit	Job Id	Step Name	State
2015-07-29 13:55:45.026308	med	Watson demo: Approval of uploaded clip [sdasd]			admira	68532	create_approval_task_list_entry	open
2015-07-29 15:44:13.84257	med	Watson demo: Approval of uploaded clip [sdasd]			admira	68534	create_approval_task_list_entry	open
2015-07-29 13:51:34.092046	med	Watson demo: Approval of uploaded clip [dsasa]			admira	68431	create_approval_task_list_entry	open
2015-07-29 13:50:12.383013	med	Watson demo: Approval of uploaded clip [abd]			admira	68530	create_approval_task_list_entry	open
2015-07-29 13:44:06.951449	med	Watson demo: Approval of uploaded clip [abc]			admira	68429	create_approval_task_list_entry	open
2015-07-29 13:40:10.877315	med	Watson demo: Approval of uploaded clip [sdas]			admira	68532	create_approval_task_list_entry	open

Configurable Task View forms support workflow update entries for end users (i.e. for approval workflows)

- Task Views are accessible via the AREMA Portal

AREMA Task View

Watson demo: Approval of uploaded clip [sdfds]

Priority: med Task assigned to orgunit admira

Creation Date: 2015-07-29 18:28:00 AREMA Job 68438 in Step create_approval_task_list_entry

Submit Date: 2015-07-30 15:15:42 Submitted by user dmae

Clip Name: test Clip Name

Material Type: Program

test Upload Remarks

Upload Remarks:

Perform Watson Analytics: Visual Recognition Speech to Text (not implemented)

Approved NOT Approved



Dashboard – Job Typen



IBM AREMA Portal | Log out

Home Jobs Upload 1 Upload 2 Upload 3 Dashboard Ingest Dashboard Service Dashboard Studio Dashboard Schnitt Folder MEM Job Essences Agents Users System Dashboard Last Portal MoSys About

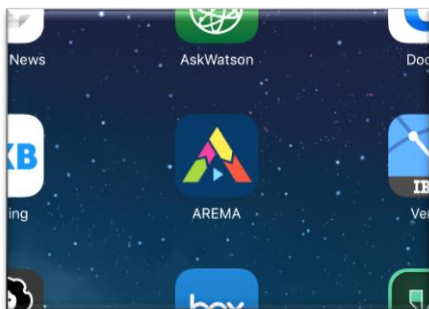
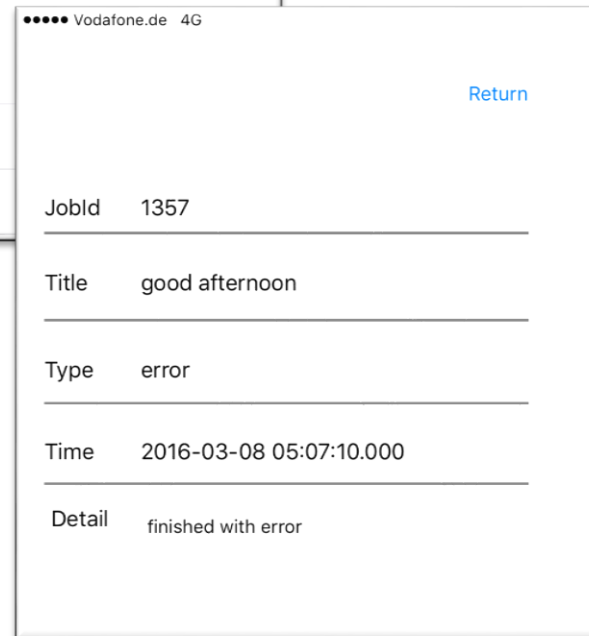
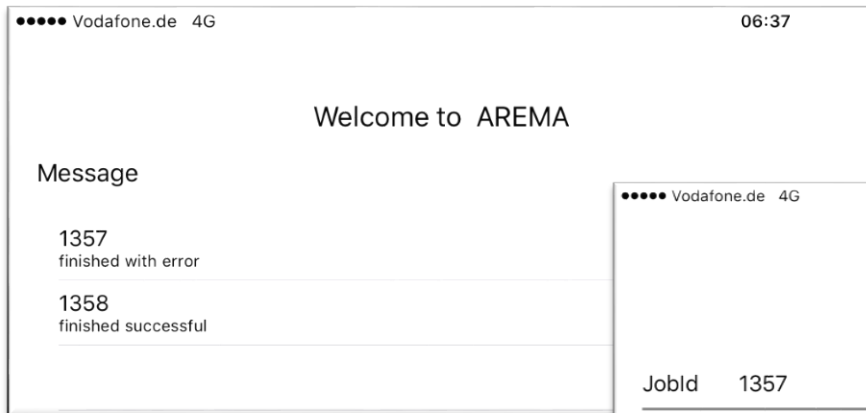
Guest Space >> Dashboard Schnitt

AREMA Dashboard Import - Schnitt

Avid intern			Auf die ZAP			Zum Playout		
Laufend 1 Peak:0 Projekte	Erfolg letzte 4h 48 Peak:0 Projekte	Fehler letzte 4h 0 Peak:0 Projekte	Laufend 1 Peak:0 Projekte	Erfolg letzte 4h 39 Peak:0 Projekte	Fehler letzte 4h 0 Peak:0 Projekte	Laufend 0 Peak:0 Projekte	Erfolg letzte 4h 57 Peak:0 Projekte	Fehler letzte 4h 0 Peak:0 Projekte
S1 RRX ab 2018 wie geplant	S1 AWO-Mitarbeiter streiken in Düsseldorf S1 Wetter 28_10_ S1 Wetter 18_00 Uhr 28_10_ p1 Sonnenaufgang S1 100 Sekunden 28_10_ p1 Augustdorfer kämpft um Deutsche Meisterschaft im		S1 RRX ab 2018 wie geplant	S1 AWO-Mitarbeiter streiken in Düsseldorf S1 Wetter 28_10_ S1 Wetter 18_00 Uhr 28_10_ p1 Sonnenaufgang S1 100 Sekunden 28_10_ p1 Augustdorfer kämpft um Deutsche Meisterschaft im			LZN_1028_AWO-Mitarbeiter streiken in Düsseldorf_N_S1_A LZ_1028_Wetter 28_10_O_S1_AOC LZN_1028_Wetter 18_00 Uhr 28_10_O_S1_AOC LZ_1028_Sonnenaufgang DUU_1028_100 Sekunden 28_10_N_S1_AOR AKS_1028_Wie klappt_s mit dem Breitbandausbau	

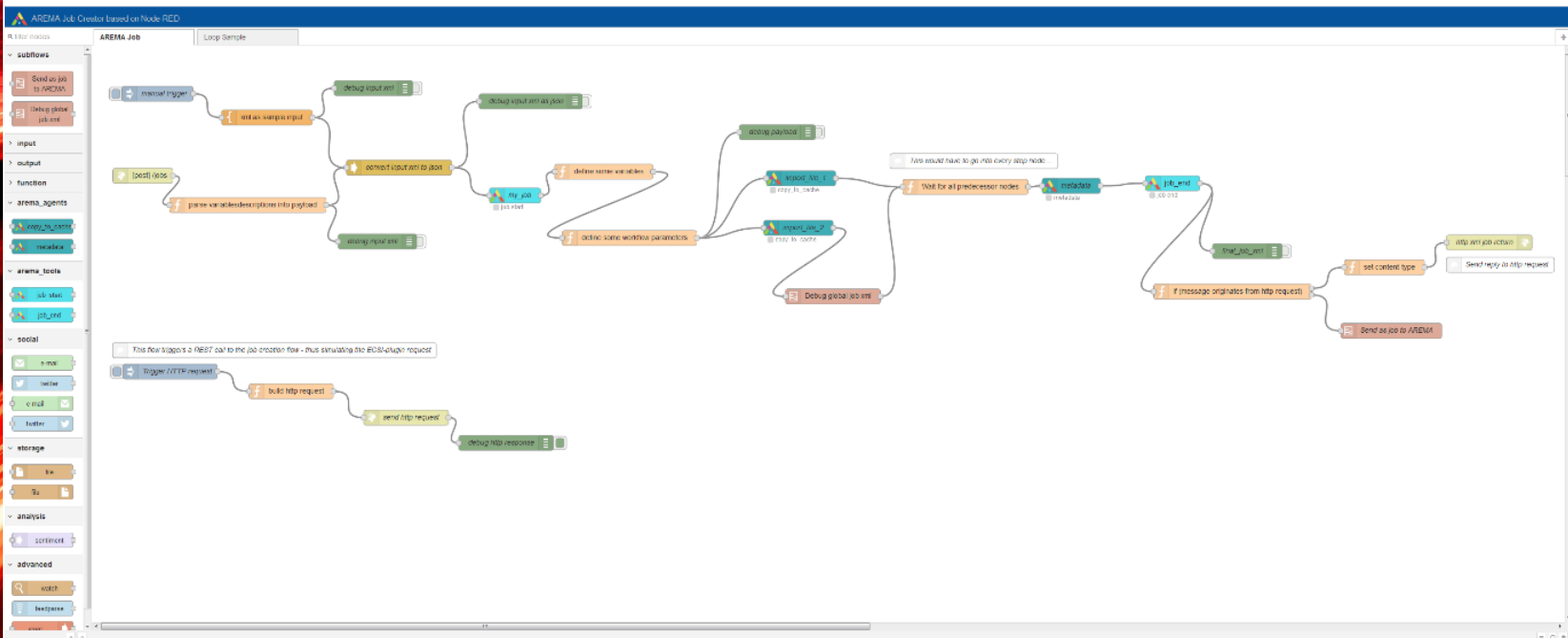
Zum Outgest			Zum Archiv		
Laufend 0 Peak:0 Projekte	Erfolg letzte 4h 1 Peak:0 Projekte	Fehler letzte 4h 0 Peak:0 Projekte	Laufend 0 Peak:0 Projekte	Erfolg letzte 4h 0 Peak:0 Projekte	Fehler letzte 4h 0 Peak:0 Projekte
	S1 Mettmann hat schon Weihnachtsbäume				

AREMA Event App – Workflows create push messages





AREMA Workflow Builder





AREMA in der Cloud

