Deliverable

Project Acronym:	ImmersiaTV
Grant Agreement number:	688619
Project Title:	*Immersive Experiences around TV, an integrated toolset for the production and distribution of immersive and interactive content across devices.*

D2.4 Content Creation

Revision: 1.1

Authors:

Gregg Young (VRT)

Luk Overmeire (VRT)

Maria Pacheco (Lightbox)

Helder Campos (Lightbox)

João Lourenço (Lightbox)

Delivery date: M25

Abstract: This document lists the content creation datasets (video content) produced during and under terms of the Immersiatv project. There are three different types of data acknowledged: raw test content (no post production attributed), processed test content, finished footage used in the pilot demonstrators (pilot 1 and pilot 1.5). All content is published under Creative Commons Attribution-NonCommercial 4.0 license.

REVISION HISTORY

Revision	Date	Author	Organisation	Description
0.1	4/5/2017	Luk Overmeire	VRT	ToC and compilation of contributions
0.2	24/5/2017	Pau Pamploma Negre	I2cat	Revision
0.3	26/05/2017	Pau Pamploma Negre	I2cat	Revision VRT
0.4	26/05/2017	Pau Pamploma Negre	I2cat	Version 1
0.5	29/5/2017	Pau Pamploma Negre	I2cat	Version 3 and version 3.1
0.6	30/5/2017	Gregg Young	VRT	Formatting and new contributions v3.2
0.7	30/05/2017	João Lourenço	Lightbox	New contributions v3.2 (a)
0.8	30/05/2017	Gregg Young	VRT	New contributions version 3.3
1	1/06/2017	Gregg Young	VRT	Final version
1.1	30/01/2018	Gregg Young	VRT	New version for pilot 2

CONTENTS

1. LIST OF CONTENT DATA SETS

	Description	Corresponding pilot iteration	Content owner	Type
MEDIA T01	360 camera rig tests on location - downtown Porto;	pilot 1	LightBox	N/P
MEDIA T02	Test footage to try out scene transition between omni images and Qbic Camera Tests conducted at Lightbox HQ;	pilot 1	LightBox	N/P
MEDIA T03	Pilot 01 footage;	pilot 1	LightBox	DEMO VERSION
MEDIA T04	Pilot 1.5 (Multi Cam Showcase) footage.	pilot 1.5	LightBox	DEMO VERSION
MEDIA T05	360 test content of cyclocross (Overijse) - 6 viewpoints	pilot 1 & 2	VRT	RAW MATERIAL
MEDIA T06	360 Orah 4i test content - children's live broadcast award show	pilot 2	VRT	RAW MATERIAL
MEDIA T07	Live pilot 2 footage – Soudal cyclocross in Leuven	Pilot 2	VRT	RAW MATERIAL

2. CONTENT DESCRIPTION

2.1.   MEDIA T01:

File name:	T01.zip
Content description:	360 camera test in downtown Porto. People walking by the riverside.
Package description:	Multiple subfolders with clips from the various takes shot for the testing by the Riverside in Porto's Downtown; This is pre-stitching footage, which means, that this is the user experience when working in such a workflow: one gets the multiple camera angles in different folders with multiple takes. Then this footage is imported into video stitching softwares in order to create the final omnidirectional image.
File size:	21.8 Gb
Recording equipment:	GoPro H3Pro6 Rig
Format:	MP4
Codec:	H.264/AVC
Codec Profile:	High@L5
Bit rate:	45 Mbps
Frame rate	47,951 fps
Frame rate mode	Constant
Chroma Subsampling	4:2:0
Bit Depth	8 bits
Scan type	Progressive
Resolution:	1920x1440
Audio available:	Yes – Camera Audio
Audio Format	AAC (Advanced Audio Codec)
Audio Format Profile	LC
Audio Bit rate	128 Kbps
Audio Bit rate mode	Constant

Audio Sampling rate	48.0 KHz
Audio Frame rate	48,875 fps (1024 spf)
Audio Compression Mode	Lossy
Licensing:	Creative Commons Attribution-NonCommercial 4.0
Example frames:	
Link:	https://zenodo.org/record/571090#.WSRH02iLTIV

2.2.   MEDIA T02:

File name:	T02.zip
Content description:	Test footage with GoPro H3Pro6 Rig to try out synchronisation between omnidirectional and directive images. There are also tests made with Qbic Camera conducted at Lightbox HQ.
Package description:	Two folders with the first synchronisation test between omnidirectional and directive images. One has 2D images, the other 360º raw unstitched files; A test folder of the Qbic camera – raw files and a final stitched output.
File size:	12.5 Gb
Recording equipment:	Directive video: Sony XDCam 360 video: GoPro H3Pro6 Rig / Elmo Qbic
Format:	Directive video: MP4 Omnidirectional video: MP4/AVC (Advanced Video Codec)
Codec	Directive video: MPEG-2 Omnidirectional video: AVC1
Codec profile:	Directive video: Main@High Omnidirectional video: High@L5
Bit rate	Directive video: 35 Mbps

	Omnidirectional video: 30 Mbps
Frame rate	Directive video: 25 fps. Omnidirectional video: 47,951fps (Qbic 27,97 fps)
Frame rate mode	Directive video: Variable Omnidirectional video: Constant
Chroma Subsampling	Directive video: 4:2:0 Omnidirectional video: 4:2:0
Bit depth	8 Bits
Scan Type	Directive video: Interlaced Omnidirectional video: Progressive (Both rigs)
Resolution:	Directive video: 1440x1080 Omnidirectional video: 1920x1080
Audio available:	Yes
Audio Format	Directive video: PCM Omnidirectional video: AAC (Both rigs)
Audio Format Profile	Directive video: Ipcm Omnidirectional video: LC
Audio Bit rate	Directive video: 128 Kbps Omnidirectional video: 128 Kbps (Both rigs)
Audio Bit rate mode	Directive video: Constant Omnidirectional video: Constant (Both rigs)
Audio Sampling rate	Directive video: 48 KHz Omnidirectional video: 48 KHz
Audio Compression Mode	Directive video: Lossy Omnidirectional video: Lossy
Licensing:	Creative Commons Attribution-NonCommercial 4.0

Example frames:	
Link:	https://zenodo.org/record/571110#.WSRI6GiLTIV

2.3. MEDIA T03:

File names:	SCENE_5.zip | SCENE_8.zip | SCENE_9.zip
Content description:	Footage from three specific scenes of Pilot 01 – Locker room scene, car scene and classroom scene.
Package description:	Three main folders: each one referring to a specific scene (i.e. SCENE 5); Inside each main folder there are two subfolders: OMNI (pertaining to 360º footage) and DIR (referring to 2D images of that scene).
File size:	26.1 Gb | 13,1 Gb | 29,5 Gb
Recording equipment:	GoPro H3Pro6 Rig (Omni) - Blackmagic Micro Studio Camera 4K (Directive)
Format:	Directive video: MOV Omnidirectional video: MP4
Codec:	Directive video: Apple ProRess422 Omnidirectional video: AVC1
Codec Profile:	Directive video: High Profile Omnidirectional video: High@L5

Bit rate:	Directive video: 491 Mbps Omnidirectional video: 45 Mbps
Frame rate	Directive video: 25 fps Omnidirectional video: 47,952 fps
Frame rate mode	Directive video: Constant Omnidirectional video: Variable
Chroma Subsampling	Directive video: 4:2:2 Omnidirectional video: 4:2:0
Bit Depth	Directive video: 10 bits Omnidirectional video: 8 bits
Scan type	Directive video: Progressive Omnidirectional video: Progressive
Resolution:	Directive video: 3840x2160 Omnidirectional video: 1920x1080
Audio available:	Yes – Camera Audio
Audio Format	Directive video: PCM Omnidirectional video: AAC
Audio Format Profile	Directive video: In24 Omnidirectional video: LC
Audio Bit rate	Directive video: 2304 Kbps Omnidirectional video: 128 Lbps
Audio Bit rate mode	Directive video: Constant Omnidirectional video: Constant
Audio Sampling rate	Directive video: 48.0 KHz Omnidirectional video: 48.0 KHz
Audio Compression Mode	Directive video: Lossy Omnidirectional video: Lossy
Licensing:	Creative Commons Attribution-NonCommercial 4.0
Example frames:	

Link:	https://zenodo.org/record/570527#.WSgLnhPyuIt https://zenodo.org/record/570551#.WSgLnhPyuIt https://zenodo.org/record/570591#.WSgLnxPyuIt

2.4.   MEDIA T04:

File names:	T03.zip
Content description:	Pilot 1.5 (Multi Cam Showcase) raw files – football game shot with multiple omnidirectional cameras.
Package description:	Two main folders - Directive and Omnidirectional. Inside the first one there is a proxy file of the TV broadcast of the filmed football game. The folder Omni has the 3 cameras and their respective raw files, that would require further stitching before creating a project and creating a product using the ImmersiaTV plugin on Adobe Premiere Pro.
File size:	35,3 Gb
Recording equipment:	GoPro H3Pro6 Rigs (Omni) – Directive footage from Broadcast capture.

Format:	Directive video: MP4 Omnidirectional video: MP4
Codec:	Directive video: AVC1 Omnidirectional video: AVC1
Codec Profile:	Directive video: MAIN@L5.1 Omnidirectional video: High@L5
Bit rate:	Directive video: 10.0 Mbps Omnidirectional video: 45 Mbps
Frame rate	Directive video: 25 fps Omnidirectional video: 29,970 fps
Frame rate mode	Directive video: Constant Omnidirectional video: Variable
Chroma Subsmapling	Directive video: 4:2:2 Omnidirectional video: 4:2:0
Bit Depth	Directive video: 16 bits Omnidirectional video: 8 bits
Scan type	Directive video: Progressive Omnidirectional video: Progressive
Resolution:	Directive video: 3840x2160 Omnidirectional video: 1920x1080
Audio available:	Yes – Camera Audio
Audio Format	Directive video: PCM Omnidirectional video: AAC
Audio Format Profile	Directive video: In24 Omnidirectional video: LC
Audio Bit rate	Directive video: 2304 Kbps Omnidirectional video: 128 Kbps
Audio Bit rate mode	Directive video: Constant Omnidirectional video: Constant

Audio Sampling rate	Directive video: 48.0 KHz
	Omnidirectional video: 48.0 KHz
Audio Compression Mode	Directive video: Lossy
	Omnidirectional video: Lossy
Licensing:	Creative Commons Attribution-NonCommercial 4.0
Example frames:	
Link:	https://zenodo.org/record/571123#.WSgV7hPytTZ

2.5. MEDIA T05:

File name:	WP2 T2.4 MEDIA T05 Cyclocross
Content description:	360 test content of cyclocross (Overijse, 6/12/2015) - 6 viewpoints.

Package description:	This content package consists of the following zipfiles: • Commentator Paul en Michel_finish.zip: captured by a 4 camera GOPRO rig (two shots not absolute by camera malfunction), raw material suitable for stitching software (Videostitch) Content: commentator booth, commentators covering the finish of the cyclocross race • Commentator Paul and Michel_start.zip raw material suitable for stitching software (Videostitch) Content: commentator booth, commentators covering the start of the cyclocross race • Start Race.zip: raw material suitable for stitching software (Videostitch) Content: cyclocross racers lining up and start of the race • Bend in the climb: raw material suitable for stitching software (Videostitch) Content: hazardous bend on the track during the climb • Bend2.zip: raw material suitable for stitching software (Videostitch) Content: 2nd hazardous bend on the cyclocross circuit • Straight through the wood.zip: raw material suitable for stitching software (Videostitch) Content: part of the track through the wood • In tent after race_1.zip: raw material suitable for stitching software (Videostitch) Content: cyclocross rider getting interviewed inside a tent after the race • In tent after race_2.zip: raw material suitable for stitching software (Videostitch) Content: cyclocross rider getting interviewed inside a tent after the race
File size:	180 Gb
Recording equipment:	7 camera GOPRO rig Hero4
Format:	MP4
Codec:	H.264/AVC
Coding profile:	MP

Bit rate:	60MB/S
Frame rate	50 fps.
Frame rate mode	Constant
Chroma Subsampling	4:2:0
Bit Depth	8 bit
Scan type	Progressive
Resolution:	1920x1440
Audio available:	no
Licensing:	Creative Commons Attribution-NonCommercial 4.0
Example frames:	
Link:	http://doi.org/10.5281/zenodo.569482 http://doi.org/10.5281/zenodo.569175 http://doi.org/10.5281/zenodo.562267 http://doi.org/10.5281/zenodo.569308

2.6.   MEDIA T06:

File name:	WP2 T2.4 MEDIA T06 Ghostrockers
Content description:	Children's live broadcast award show,
Package description:	Ghostrockers.mp4: table shot of a music band sitting together on a table during a music award show, , equirectangular format
File size:	276.5 MB
Recording equipment:	Orah 4i camera
Format:	MP4
Codec:	H.264/AVC
Coding profile:	MP
Bit rate	21 MB/s
Frame rate	30 fps
Frame rate mode	Constant
Chroma Subsampling	4:2:0
Bit Depth	8 bit
Scan type	Progressive
Resolution:	2048×1024
Audio available	Yes (camera audio, overdriven)
Audio Format	AAC
Audio Format Profile	LC
Audio Bit rate	128 kbps
Audio Bit rate mode	Constant
Audio Sampling rate	48.0 KHz
Audio Frame rate	30 fps

Audio Compression Mode	Lossy
Licensing:	Creative Commons Attribution-NonCommercial 4.0
Example frames:	
Link:	http://doi.org/10.5281/zenodo.569844

2.7. MEDIA T07:

File name:	T07.zip
Content description:	Live pilot 2 raw files for cyclocross race with multiple omnidirectional cameras, and directional TV output. 2 type of omnidirectional cameras have been used: (1) Orah 4i (2) AZilPix Studio.One camera
Package description:	Two main folders - Directive and Omnidirectional. Inside the first one there is a high quality version of the TV broadcast of about 10 minutes of the filmed cyclocross men's elite race. The folder Omni has the 4 cameras and their respective raw files, that would require further editing to create a product in the form of a simulated live cyclocross experience, using either the ImmersiaTV plug-in or Cinegy Live.
File size:	Directive video: 5,8 GB Orah: 1840,6 MB Studio.One: 4,41 GB
Recording equipment:	Directive video: LDK 8000 HD production camera + live editing Orah 4i: 3 cameras AZilPix Studio.One: 1 camera
Format:	Directive video: MXF Orah: MPEG-TS

	Studio.One: MOV
Codec:	Directive video: AVC-Intra 100
	Orah: H.264-AVC
	Studio.One: H.264-AVC
Codec Profile:	Directive video: High 4:2:2 Intra Profile, Level 4.1
	Orah: HP
	Studio.One: MP
Bit rate:	Directive video: 100 Mb/s
	Orah: 9759 kb/s
	Studio.One: 31 Mb/s
Frame rate	Directive video: 25 fps
	Orah: 30 fps
	Studio.One: 25 fps
Frame rate mode	Directive video: Constant
	Orah: Constant
	Studio.One: Constant
Chroma Subsampling	Directive video: 4:2:2
	Orah: 4:2:0
	Studio.One: 4:2:0
Bit Depth	Directive video: 10 bit
	Orah: 8 bit
	Studio.One: 10 bit
Scan type	Directive video: MBAFF
	Orah: Progressive
	Studio.One: Progressive
Resolution:	Directive video: 3840 x 2178
	Orah: 4096 x 2048
	Studio.One: 3840 x 2160
Audio available:	Directive video: yes
	Orah: no audio
	Studio.One: yes

Audio Format	Directive video: PCM Studio.One: PCM
Audio Bit rate	Directive video: 1152 kb/s Studio.One: 1536 kb/s
Audio Bit rate mode	Directive video: 16 bit Studio.One: 16 bit
Audio Sampling rate	Directive video: 48 KHz Studio.One: 48 KHz
Audio Compression Mode	Directive video: Lossy Studio.One: Lossy
Licensing:	Creative Commons Attribution-NonCommercial 4.0
Example frames:	

| Link: | http://doi.org/10.5281/zenodo.1162949 |