ISMAR 2017

16th IEEE International Symposium on Mixed and Augmented Reality

October 9th-13th 2017

ISMAR GUIDE

Nantes, France

Cité Nantes Events Center

www.ismar17.org

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Sponsors

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The Vuforia® platform is the most widely used software platform for augmented reality applications. For developers, it delivers a cross platform solution for attaching digital content to physical objects and environments. For consumers and businesses, it provides a communications solution for remote assistance and collaboration. For device makers, it delivers critical technology blocks that provide optimized experiences on rapidly evolving hardware technologies. Launched in 2011, Vuforia is supported by a global ecosystem of more than 375,000 developers and partners. Vuforia has enabled more than 45,000 applications for consumer and business use on a range of handheld and headworn devices.

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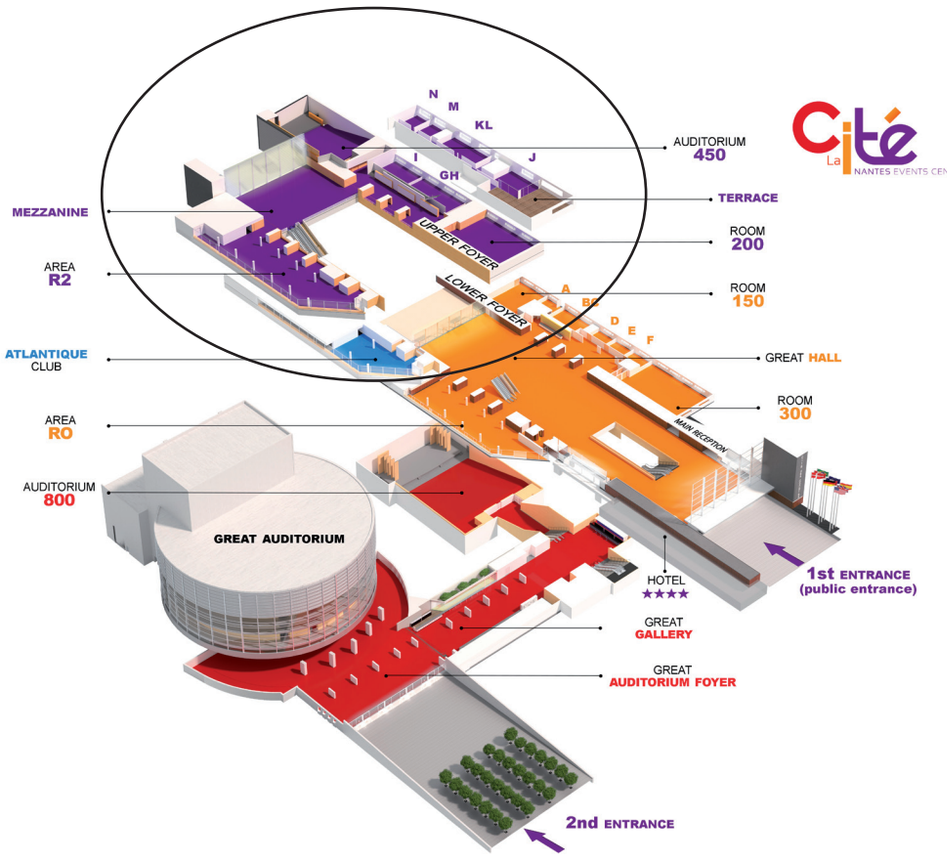
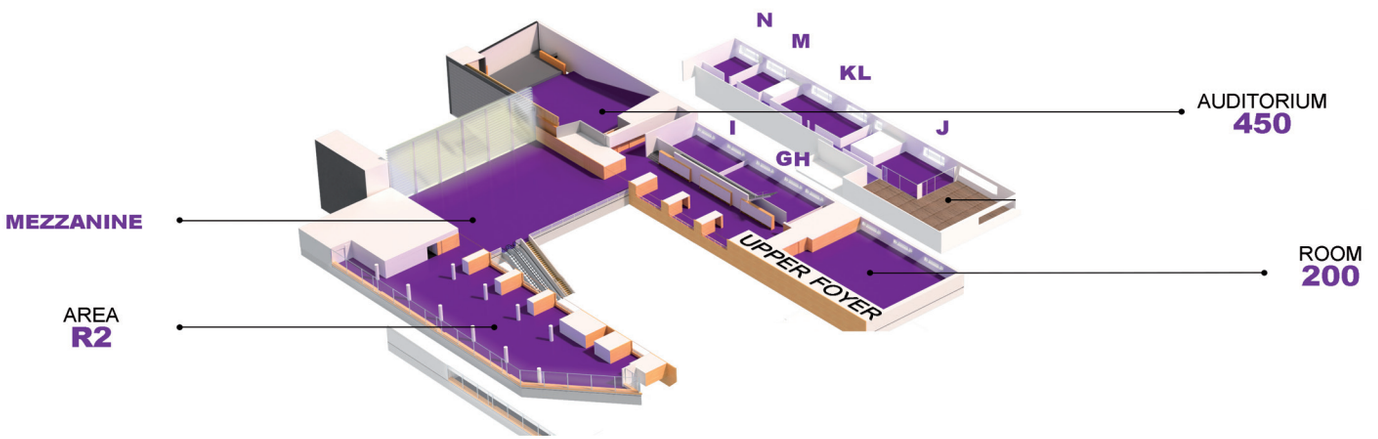
Cité Nantes Events Center

General view





Spaces for ISMAR 2017

Public transport

City Nantes Events Center, easy to reach

Located in the city centre, just a 5-minute walk from the high-speed train station (South exit) and a 20-minute shuttle ride from the airport, La Cité is served by excellent transport links:

By Tram

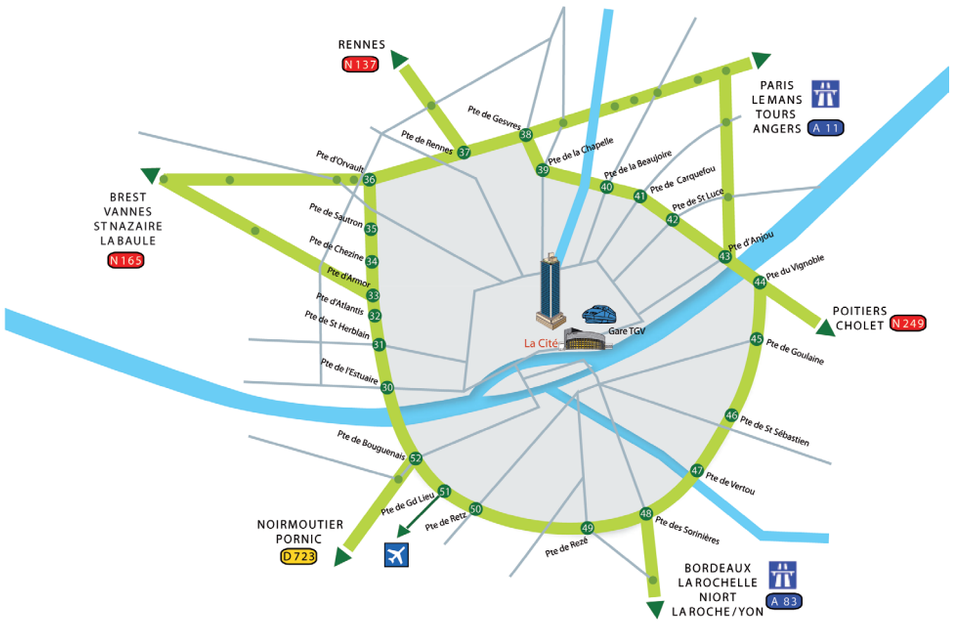
Line 1 - « Duchesse Anne - Château des Ducs de Bretagne » tram stop, one stop from the TGV railway station (North exit).
Airport/city centre shuttle bus: every half hour - « Cité Internationale des Congrès » stop.
Busway: line 4 - « Cité Internationale des Congrès » stop.

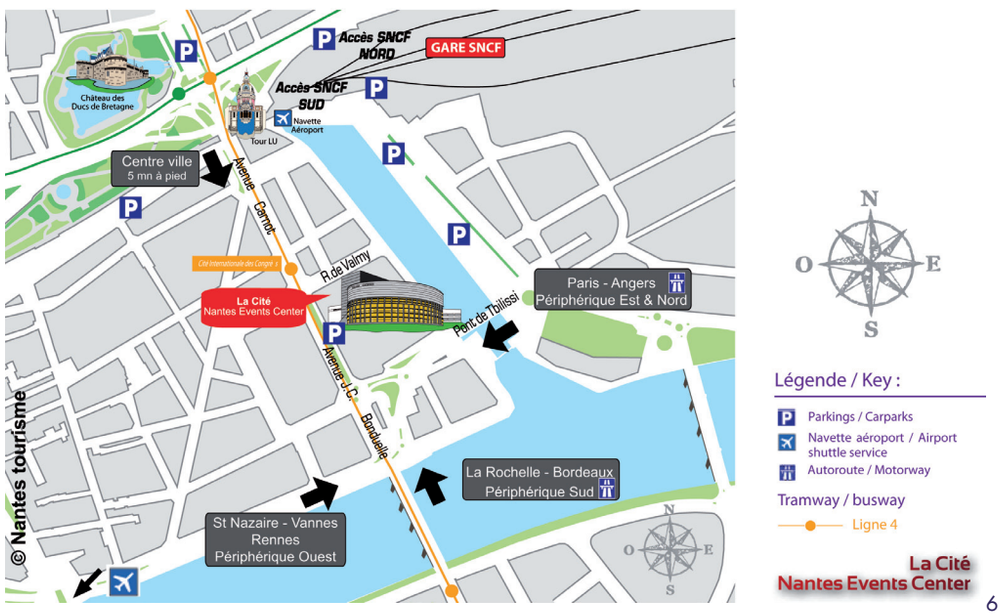
Using Tan tickets, you can travel on the tram, BusWay, bus (except the airport shuttle).
Fare : 1,60 € for a one hour ticket and a book of 10 one-hour tickets 14.90 €
· Validate your ticket while boarding the 1st time.
· Transfers are authorized.
· Show it to the bus driver during transfers.
Information : https://www.tan.fr/en

Public transport in Nantes

Nantes boasts innovative, multimodal and eco-responsible means of transport offering visitors easy and safe travelling within the urban area:
· 40 km-tram network
· 4 tram and BusWay lines
· 53 bus lines
· 3 river shuttle lines
· Bicloo : a self-service bike system with 900 bicycles and 90 stations.

La Cité Location Map





Welcome

We are delighted to welcome you to the 16th IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2017) held from October 9th to 13th in Nantes.

ISMAR has established itself as the leading international academic conference in the fields of Augmented Reality and Mixed Reality. It has its foundations on the fusion of two former events: the International Symposium on Augmented Reality (ISAR) and the International Symposium on Mixed Reality (ISMR). The 16th ISMAR aims at bringing new horizons to the community as it is the very first in the series to be held in France. The conference is jointly organized by Centrale Nantes and Inria, and it is held at La Cité, Nantes Events Center.

The essence of ISMAR is the quality of the works presented, and we are proud to have a strong program in all the conference strands: the Science and Technology Program gathering 33 papers in 9 sessions, the continuation of the successful Poster Papers Track including 61 posters, an inspiring selection of 7 Workshops and 3 Tutorials as well as a comprehensive Demo Track. In addition, this year, we are proud to introduce the "VR Tour": a visit of four high-end sites in the field of research and innovation in Virtual Reality, in the area of Rennes, located 100 km from Nantes. Besides, we are very honoured to have two world class experts as keynote speakers: Georg Klein, Scientist at Microsoft Corporation, presenting "Registration on Hololens"; and Marie-Odile Berger, Research Director at Inria, presenting "Pose estimation for effective AR tasks".

Of course, ISMAR happens because of many volunteers that donate significant time and expertise for over a year. We express our extended thanks to all the members of the Conference Committee, the S&T Program Committee, the Steering Committee, and the Local Organization Committee. We also thank our sponsors for their financial support and everyone that has contributed to make ISMAR 2017 a reality!

We hope you will find ISMAR 2017 an exciting and motivating event.

Guillaume Moreau
Anatole Lécuyer
Jean-Marie Normand
Myriam Servières

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- Jens Grubert, University of Passau, Germany
- Florian Nouviale, IRISA, France

Workshops/Tutorials Chairs
- Gerd Bruder, University of Centrale Florida, USA
- Myriam Servières, Ecole Centrale de Nantes, France
- Maki Sugimoto, Keio University, Japan

VR Tour Chairs
- Valérie Gouranton, INSA Rennes, France
- Ronan Gaugne, Université Rennes I, France

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Conference Committee

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Georg Klein

Conference
Tuesday, Oct. 10th
9:30 - 10:30
Auditorium 450

Georg Klein is a scientist at Microsoft Corporation.
He obtained an MEng and a PhD from the University of Cambridge in 2001 and 2006.

While his first attempts at computer vision involved the visual guidance of a mobile robot, his PhD work focused on applying model-based visual tracking to augmented reality.

During a post-doc at the University of Oxford, his research emphasis shifted to advancing SLAM techniques for AR, producing the well-known PTAM monocular SLAM system.

In 2009 he joined Microsoft, where he has helped develop the Microsoft Hololens, a commercially available self-tracked optical see-through HMD.

Registration on Hololens

Microsoft Hololens is an optical see-through HMD that provides users the illusion of world-locked holograms: virtual content that appears stationary in the world even as the user moves around. In this talk I will describe some of the enabling technologies developed to achieve this, from sensors to displays to the Holographic Processing Unit.

Marie-Odile Berger

Conference
Wednesday, Oct. 11th
10:30 - 11:30
Auditorium 450

Marie-Odile Berger is Research Director at Inria Nancy Grand Est (France).

Her main research interest is the investigation of computer vision methods to support augmented reality (AR) tasks. Since the late 1990s, she has been engaged in many aspects of 3D reconstruction and pose computation, which are two main issues in AR.

This research led to various theoretical and practical results in the areas of calibration, matching and 3D tracking, interactive reconstruction and visual perception.
Her research also focuses on developing AR for deformable worlds with effective applications to interventional radiology.
She is currently the head of the MAGRIT computer vision group at Inria.

Pose estimation for effective AR tasks.

The aim of my research in Augmented Reality is to develop reliable and effective methods which allow significant progress in terms of ease of implementation, robustness to external conditions and capacity of handling complex environments.
In this talk, I will present various works on pose estimation and scene modeling that have in common the goal to meet the expected robustness in different application contexts.
Though tracking strategies are now relatively mature, automatic pose initialization is still a barrier in many AR systems. Difficulties especially originate in repeated patterns, common in man-made environments, and in large variations of the viewpoint between the data stored in the model and the current view.
I will describe solutions for the estimation of the initial pose, both in the rigid and in the deformable context. These contributions are based on different methodologies depending on the application context. They range from A Contrario statistical models, to the use of view synthesis and to contextual learning-based methods specific to urban environments.
Finally, I will briefly address the role of interaction in the development of AR applications through in-situ modeling.

Schedule

Program

	Auditorium 450	Room 200	Room G	Room H	Room I	Room J	Mezzanine	R2
Monday, October 9th								
8:00-9:00 Registration								
Morning	VR Tour - Departure from Nantes City Center			Whole the day in Rennes				
			Tutorial T1	Tutorial T3	Workshop W5	Workshop W6	Coffee Break	Lunch
Afternoon								
VR Tour Come Back			Tutorial T2	Tutorial T3	Workshop W5	Workshop W1	Coffee Break	
Tuesday, October 10th	Auditorium 450	Room 200	Room G	Room H	Room I	Room J	Mezzanine	R2
8:00-9:00 Registration								
Morning	Auditorium 450 - Introduction 9:00-9:30			Keynote Georg Klein: Registration on Hololens. 9:30-10:30				
	Oral Sessions 1 and 2						Coffee Break	Lunch
Afternoon	Oral Session 3							
	Demo teasers		Demos sessions	Demos sessions			Coffee Break	
	Pitch your Lab							
	Opening of Exhibitor's stands, Mezzanine, Afternoon - 14:00							
	Wine and Cheese, Mezzanine - 19:00							
Wednesday, October 11th	Auditorium 450	Room 200	Room G	Room H	Room I	Room J	Mezzanine	R2
8:00-8:30 Registration								
Morning	Auditorium 450 - Keynote Marie-Odile Berger:			Pose estimation for effective AR tasks. 10:30-11:30				
	Oral Sessions 4 and 5						Coffee Break	Lunch
Afternoon	Oral Session 6						Coffee Break	
	Poster Teaser group A	Poster session A	Demos sessions	Demos sessions				
	Gala Dinner "Les Machines de L'Ile", Nantes - 19:00							
Thursday, October 12th	Auditorium 450	Room 200	Room G	Room H	Room I	Room J	Mezzanine	R2
8:00-8:30 Registration								
Morning	Oral Session 7						Coffee Break	Lunch
	Oral Session 8							
Afternoon	Oral Session 9						Coffee Break	
	Panel 1							
	Poster Teaser group B	Poster session B	Demos sessions	Demos sessions				
	End of Exhibitor's stands							
	Closing Ceremony							
Friday, October 13th	Auditorium 450	Room 200	Room G	Room H	Room I	Room J	Mezzanine	R2
8:00-9:00 Registration								
Morning		Workshop W4	Workshop W2		Workshop W7	Workshop W3	Coffee Break	Lunch
Afternoon		Workshop W4			Workshop W7	Workshop W3	Coffee Break	

Tutorials and Workshops - Monday, October 9th:
T1: Future TV content and aesthetics, T2: Developping Virtual Reality Toolkit,
T3: SOFA. W1: Mixed and Augmented Reality Experience Capture, W5: Augmented Reality for Good, W6: VAMrE 2017

Tutorials and Workshops - Friday, October 13th:
W2: Enterprise AR Adoption Obstacles, W3: Standards for Mixed and Augmented Reality,
W4: VR and AR meet Creative Industries, W7 HDCD4MAR

VR Tour

The VR tour is a specificity of ISMAR 2017, it proposes on October 9th a visit of four high-end sites in the domain of research and innovation in Virtual Reality, in Rennes, located 100km from Nantes. The VR tour is reserved to previously registered guests. Departure in bus from Nantes City Center at 8:30 and come back in the end of the afternoon.

Tutorials

T1 - Future-tv content and aesthetics. 9:00-12:30 - Room G
Organizers:
· Rémi Cozot (IRISA, France)
· Alan Chalmers (University of Warwick, UK)
· Céline Loscos (University of Reims, France)

The first part of this tutorial gives a picture of the broadcast market and summarizes the key features of the new current standard UHDTV: 4K spatial resolution, High Dynamic Range, High Frame Rate and Wide Color Gamut. According to the current trend, the next step in the broadcast market should be to address more immersive and interactive contents such as 360 videos or even more free view-point contents. Next, the second part of the tutorial presents recent advances in the capture of animated 3D point clouds. 3D points clouds seem to be the most promising format that can propose many new user experiences. This tutorial part explains how to combine in a single acquisition system: 3d reconstruction, high resolution and high dynamic range. The last part of the tutorial takes a step back and open the scope to aesthetic intents, more precisely what are the challenges related to aesthetics intent when considering these new kinds of content. Using previous works on video tone mapping and video tone expansion, we focus on how to ensure aesthetic fidelity to an original content when retargeting this original content to a specific display.

T2 - Developing Virtual Reality applications with the Visualization Toolkit (VTK). 13:30-17:00 - Room G
Organizers:
· Lucas Gandel (Kitware SAS)
· Julien Jomier (Kitware SAS)

The aim of this tutorial is to provide an introduction to the recent features added to the Visualization Toolkit (VTK) that now allows for rendering in external immersive environment . An introduction to VTK will be given in order to explain the basics and how to create visualization applications, followed by a description of modules allowing you to take your application into virtual reality (VR). The last part of the tutorial will focus on interactions by presenting different ways to interact in a VR environment using the VTK pipeline.
The aim is for attendees to be able to build their first application in VR using VTK. They will get strong knowledge on a cross-platform, open-source and freely available system software.
By taking more people into the VTK-VR loop, we hope to make mixed and augmented reality benefit more from VTK's advanced visualization, processing and modeling techniques, such as volume rendering or point cloud visualization.
More information: http://www.vtk.org/

T3 - SOFA, an open-source framework for physics simulation in augmented reality 9:00-12:30 / 13:30-17:00 - Room H
Organizer:
· Hugo Talbot (INRIA, France) SOFA Consortium Coordinator

This tutorial will shortly review the background in physics simulation and introduce the main principles of the SOFA framework. Examples of SOFA simulations will be presented. The afternoon will be more «hands-on» oriented starting with an interactive user tutorial, followed by a developer tutorial. Further to this tutorial, you should have all the basis to build your own physics simulation.
The SOFA tutorial at ISMAR is the opportunity to discover an open-source physics engine and include physics in your AR applications. From a starting up to a developer level, this tutorial focus on the wide topic of physics simulation.
Not only will the physics of SOFA add realism into your AR application, but it might allow you to address new research and industrial challenges. Moreover, the flexible architecture of the software and the large international open-source community will make your start with SOFA easier. Attend the tutorial and join the community!
This tutorial is done once a year. A global publication about SOFA has been published in 2012: Multi-Model Framework for Interactive Physical Simulation.
All publications based on SOFA can be found here : *https://www.sofa-framework.org/applications/publications/*

Workshops

W5 - Augmented Reality for Good. 9:00-12:30 / 13:30-17:00 - Room I

Organizers:
· Arindam Dey (University of South Australia, Australia)
· Mark Billinghurst (University of South Australia, Australia)
· Gregory Welch (University of Central Florida, USA)

Augmented Reality has started to become mainstream. With the AR research and technological advances, it is now possible to use AR in almost all domains and places. This provides a bigger opportunity to create applications that intend to impact society in greater ways than beyond just entertainment. Today the world is facing different challenges in health, the environment, and education among others. Now is the time to explore how AR could be used to solve widespread societal challenges.
We invite application and position papers, addressing the way that AR can solve real-world problems in various application domains including, but not limited to, health, the environment, education, sports, and applications in support of special needs such as assistive, adaptive, and rehabilitative applications. Our focus and preference will be on applications that are beyond general uses of AR. The workshop will have oral presentations, group work, and panel to explore ideas.
More information: http://ar4good.org

W6 - Virtual, Augmented and Mixed Reality in Education (VAMrE 2017). 9:00-12:30 - Room J

Organizers:
· Kuo-En Chang (National Taiwan Normal University, Taiwan)
· Jia Zhang (National Taiwan Normal University, Taiwan)
· Tzu-Chien Liu (National Taiwan Normal University, Taiwan

Workshop on Virtual, Augmented and Mixed Reality in Education (VAMrE 2017) offers an opportunity to exchange, publish, and discuss ideas and thoughts regarding the scope of research related to the applications of VAMR in education. The theme is focused on, but not limited to, applications of VAMR in the development of teaching strategies, establishment of a teaching environment, improvement of learning effectiveness, application of psychological factors related to learning, and other related research.
More information: http://www.vamre.org

W1 - Mixed and Augmented Reality Experience Capture. 13:30-17:00 - Room J

Organizer:
· Christine Perey (PEREY Research & Consulting)

This workshop focuses on approaches and system architectures for content creation and management. The content of concern to the participants of this workshop is linear, time-stamped content captured and then played/reviewed and otherwise treated as «normal» digital video content, at any time in the future. It encompasses the media files in any/all formats and associated metadata.
The topics and questions on which this workshop will focus include:
· Components and/or systems, and architectures for MAR Experience streaming and capture
· Design, selection and integration of sensors for MAR experience capture
· Local power and processor management during MAR experience capture
· Compression during or following MAR experience capture
· MAR experience capture metadata
· Novel visual interactions with archives of captured MAR experiences
· Network architectures for MAR experience capture and transport
· Components and/or systems for MAR Experience archive storage, replication, management and access
· Benefits and drawbacks of distributed architectures for MAR experience capture and management
· Policies and guidelines for MAR experience capture and management

More information: http//www.perey.com/ISMAR2017-Workshop-on-MAR-Experience-Capture
Contact : ismar2017workshop-on-exp-capture@perey.com

Pratical information :

· Coffee Breaks: Morning10:30-11:00 - Afternoon 15:30-16:00

· Lunch: 12:30- 13:30

VR Tour in details

The VR tour is a specificity of ISMAR 2017, it proposes on October 9th a visit of four high-end sites in the domain of research and innovation in Virtual Reality, in Rennes, located 100km from Nantes.

Technicolor

Technicolor is developing today's solutions for tomorrow's interactive media environments. Through our research laboratories, we offer professionals and end-users the solutions they need to extend their immersive experiences.

We invest our expertise in computer graphics, computer vision and video processing applied to virtual reality, augmented reality and light-field domains. During this tour you will be able to visit our new VR room and to see the following demos: Volumetric Video Format: a new video-based transmission format for VR; Social & Embodiment VR media: a VR media made of 360 movies mixed with real-time objects for several users; Mixed Reality Interactive TV Mosaic: a multi-device immersive and personalized TV experience; Immersive Light Field Video Experience: a Light Field capture & rendering pipeline which allows high flexibility to view scenes with dynamic parallax; Color Management for VR Production: a technology to produce VR experiences with a high level of color precision and quality across different VR devices; Immersive Communication Technology: an innovative way to interact with others in a natural manner, through an extension of their set-top-box and a consumer sensor device.

More information: http://www.technicolor.com/

b<>com Institute of Research and Technology

Through its innovations, the b<>com Institute of Research and Technology (IRT), founded in late 2012, is contributing to the European digital transformation.

Its **230 researchers** are developing tools, products, and services that make everyday life easier. They focus on two fields of research: **the hypermedia** (ultra high-definition images, 3D sound, smart content, virtual and augmented reality, etc.) and **more agile ultra-high-speed networks** (cloud, cyber-security, ultra-high-speed mobile, network resiliency, Internet of Things, etc.).

During the visit of b<>com, you will visit the Immersive Interactions lab which will present various experiences in VR. The Immersive Interactions lab focuses on natural interaction in immersive environments. It incorporates technologies that enhance human performance. In particular, it studies collaboration between heterogeneous immersive systems, ranging from augmented reality glasses to advanced gesture-based interfaces to industrial virtual reality equipment. The user is central to the way the laboratory thinks and works, from defining usage cases to prototyping.

More information: https://b-com.com/en/innovation-fields/immersive-interactions

Immersia

Located in Inria/IRISA research center, on the Science University campus of Rennes, the Immersia platform is dedicated to research in immersive interaction in VR.

This large immersive facility, measures 9,60 meters long, 3,10 meters high and 3 meters width, aims to allow interaction with a virtual world, with the most realism possible. The immersive equipment immerses users in a high-quality visual and auditory environment and provides various technologies to enable multi-modal rich interactions with 6D haptic, BCI, full body optical tracking, joyman...
The platform is mainly used for experimentation in VR and applications of VR such as medical training, cultural heritage, industry, cinema, art...
During the visit, you will try an immersive experience in Immersia and you will have different demonstrations of interaction modalities proposed by the Inria/IRISA Hybrid research team.

More information: Immersia: http://www.irisa.fr/immersia/
Hybrid: https://team.inria.fr/hybrid/

IMMERVOVE

Located in "Ecole Normale Supérieure de Rennes", Immermove is a unique experimental platform for studying large-scale human movements. Whether it is sport situations, individual or collective, up to crowd simulation, the platform is coupled with a virtual reality environment. This platform of virtual reality allows us to immerse ourselves in the environment that we seek to study.

During the visit, you will try an immersive experience in Immermove and you will have different demonstrations of the research work of the Inria/IRISA/M2S Mimetic research team.

More information: https://team.inria.fr/mimetic/

Tuesday, October 10th

Introduction 09:00-09:30

Keynote Conference

Georg Klein: Registration on Hololens. 09:30-10:30 (Auditorium 450)

Coffee break 10:30-11:00

S&T Oral Sessions, Auditorium 450

Oral Session 1: Tracking and localization 11:00-12:30
Chair: to be announced

· **Dense Visual SLAM with Probabilistic Surfel Map**
Zhixin Yan - Bosch Research, Palo Alto, California, United States, Mao Ye - Bosch Research, Palo Alto, California, United States, Liu Ren - Bosch Research, Palo Alto, California, United States

· **Looking Beyond the Simple Scenarios: Combining Learners and Optimizers in 3D Temporal Tracking**
David Joseph Tan - TU Munich, Munich, Bavaria, Germany, Nassir Navab - TU München, Munich, Germany Federico Tombari - Technical University of Munich, Munich, Bavaria, Germany

· **Improving Camera Pose Estimation via Temporal EWA Surfel Splatting**
Nikolaos Zioulis - Information Technologies Institute - Centre for Research and Technology Hellas, Thessaloniki, Greece, Alexandros Papachristou - Information Technologies Institute - Centre for Research and Technology Hellas, Thessaloniki, Greece, Dimitrios Zarpalas - Information Technologies Institute - Centre for Research and Technology Hellas, Thessaloniki, Greece, Petros Daras - Information Technologies Institute - Centre for Research and Technology Hellas, Thessaloniki, Greece

· **Monocular Visual-Inertial State Estimation for Mobile Augmented Reality**
Peiliang Li - HKUST Robotics Institute, Hong Kong, Hong Kong SAR, China, Tong Qin - Robotics Institute, HKUST, Hong Kong, Hong Kong, Botao Hu - Amber Garage, Inc., Atherton, California, United States, Fengyuan Zhu - ITP, New York University, New York City, New York, United States, Shaojie Shen - HKUST Robotics Institute, Hong Kong, Hong Kong SAR, China

Lunch break 12:30-14:00

Oral Session 2: Rendering 14:00-15:30
Chair: to be announced

· **VisMerge: Light Adaptive Vision Augmentation via Spectral and Temporal Fusion of Non-visible Light**
Jason Orlosky - Osaka University, Toyonaka, Osaka, Japan, Peter Kim - Osaka University, Toyonaka, Osaka, Japan, Kiyoshi Kiyokawa - Osaka University, Toyonaka, Osaka, Japan, Tomohiro Mashita - Osaka University, Toyonaka, Osaka, Japan, Photchara Ratsamee - Osaka University, Toyonaka, Osaka, Japan Yuki Uranishi - Osaka University, Toyonaka, Osaka, Japan, Haruo Takemura - Osaka University, Toyonaka, Osaka, Japan

· **SonifEye: Sonification of Visual Information using Physical Modeling Sound Synthesis**
Hessam Roodaki - Technische Universität München, Munich, Germany, Navid Navab - Topological Media Lab, Concordia University, Montreal, Quebec, Canada, Abouzar Eslami - Carl Zeiss Meditec AG, Munich, Germany, Nassir Navab - Technische Universität München, München, Germany

· **Acoustic Classification and Optimization for Multi-Modal Rendering of Real-World Scenes** (directly submitted TVCG paper)
Carl Schissler - University of North Carolina at Chapel Hill, United States, Christian Loftin - University of North Carolina at Chapel Hill, United States, Dinesh Manosha University of North Carolina at Chapel Hill, United States

· **Image-Based Models for Secularity Propagation in Diminished Reality** (directly submitted TVCG paper)
Souheil Hadj Said - CEA-LIST, Saclay, France, Mohamed Tamaazousti - CEA-LIST, Saclay, France, Adrien Bartoli - CNRS, Clermont-Ferrand, Auvergne, France

Coffee break 15:30-16:00

Oral session 3: Acquisition and learning 16:00-17:00
Chair: to be announced

· **Live User-Guided Intrinsic Video For Static Scenes**
Abhimitra Meka - Max Planck Institute for Informatics, Saarbrucken, Saarland, Germany Gereon Fox - Graduate School of Computer Science, Saarland University, Saarbrücken, Saarland, Germany, Michael Zollhoefer - Max Planck Institute for Informatics, Saarbrücken, Saarland, Germany, Christian Richardt - Department of Computer Science, University of Bath, Bath, United Kingdom, Christian Theobalt - Max Planck Institute for Informatics, Saarbrucken, Saarland, Germany

· **Deep 6-DOF Tracking**
Mathieu Garon - Université Laval, Québec, Quebec, Canada, Jean-Francois Lalonde - Université Laval, Québec, Quebec, Canada

· **Facade proposals for urban augmented reality**
Antoine Fond - Université de Lorraine, Nancy, France Marie-Odile Berger - INRIA Nancy-Grand Est, Nancy, France, Gilles Simon - Université de Lorraine, Nancy, France

Demos sessions - Room G-H

- Tuesday Oct. 10th 17:30-18:30
- Wednesday Oct. 11th 16:30-18:00
- Thursday Oct. 12th 16:30-18:00

List of Demos in operation from Tuesday, October 10th to Thursday, October12th

	Title	Authors
1	MR TV Mozaik: A New Mixed Reality Interactive TV Experience	Matthieu Fradet, Caroline Baillard, Anthony Laurent, Tao Luo, Philippe Robert, Vincent Alleaume, Pierrick Jouet, Fabien Servant
2	Augmented Things 3D Object Tracking	Jason Rambach, Alain Paganiy, Didier Stricker
3	Uteraug: Augmented Reality in Laparos-copic Surgery of the Uterus	Tom François, Clément Debize, Lilian Calvet, Toby Collins, Daniel Pizarro, Adrien Bartoli
4	RA-GO: a SAR Go Interface	Etienne Peillard, Myriam Servières, Jean-Marie Normand
5	Finger-tracking based 3D Interaction on a Mobile Device with a Monocular Rear Camera	Kazuma Tada, Takashi Komuro
6	Augmented Reality for User-Friendly Intra-Oral Scanning	Janine Thoma, Michal Havlena, Severin Stalder, Luc Van Gool
7	A See-through Mobile AR System using an Auto-stereoscopic Display	Ryota Ito, Ryota Nomura, Yuji Amano, Yuko Unuma, Takashi Komuro
8	VRBeat: Real-Time Multi-Sensory Heart Rate Feedback in Immersive Virtual Reality Experiences	Hao Chen, Arindam Dey, Mark Billinghurst, Robert W. Lindeman
9	SelfieWall: A Mixed Reality Advertising Platform	Yu You, Alain Boyery, Tero Jokelaz, Petri Piippo
10	6D Object Pose Estimation with Depth Images: A Seamless Approach for Robotic Interaction and Augmented Reality	David Joseph Tan, Nassir Navab, Federico Tombari
11	Believable Virtual Characters for Mixed Reality	Jorge Arroyo-Palacios, Richard Marks
12	CR-TALK: Interactive Telepresence on Mixed Reality	Yong-Ho Lee, Young-Uk Kim, Eunseok Choi, Gyeong-Soo Noh, Hwang-Youn Kim, Eun-Mi Lee, Tae-Young Lee, Joong-Jae Lee, Bum-Jae You
13	CollabAVR - A collaborative AR-VR application	Etienne Peillard, Lionel Dominjon, Alexandre Bouchet
14	Demonstrating Pointing Refinement Techniques for Augmented Reality	Mikko Kytö, Barrett Ens, Thammathip Piumsomboon, Mark Billinghurst
15	Industrial maintenance and inspection on mobile see-through devices with a close link to CAD systems	Michael Schmitt, Florian Schmitt, Jens Keil, Timo Engelke, Harald Wuest
16	Byteblocks – a tangible AR exploration of bytebeat	Rodney Berry

Tuesday, October 10th

Pitch your Lab 17:30-18:30 Auditorium 450

Wine and Cheese 19:00 Mezzanine

S&T Oral Sessions, Auditorium 450

Oral session 4: Projector camera systems 08:30-10:00
Chair: to be announced
· **Robust Geometric Self-Calibration of Generic Multi-Projector Camera Systems**
Simon Willi - Disney Research, Zürich, ZH, Switzerland, Anselm Grundhoefer - Disney Research, Zürich, ZH, Switzerland
· **Simultaneous Projection and Positioning of Laser Projector Pixels**
Yuki Kitajima - Osaka University, Osaka, Osaka, Japan Daisuke Iwai - Osaka University, Toyonaka, Osaka, Japan Kosuke Sato - Osaka University, Osaka, Japan
· **Extended Dot Cluster Marker for High-speed 3D Tracking in Dynamic Projection Mapping**
Yoshihiro Watanabe - University of Tokyo, Tokyo, Japan, Toshiyuki Kato - University of Tokyo, Tokyo, Japan Masatoshi Ishikawa - University of Tokyo, Tokyo, Japan
· **FaceForge: Markerless Non-Rigid Face Multi-Projection Mapping**
Christian Siegl - Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany Vanessa Lange - Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany Marc Stamminger - Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany Frank Bauer - Friedriech-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany Justus Thies - Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany

Coffee break 10:00-10:30

Keynote Conference

Marie-Odile Berger: Pose estimation for effective AR tasks. 10:30-11:30
(Auditorium 450)

Oral Session 5: Viewing and occlusion 11:30-12:30
Chair: to be announced
· **Occlusion Matting: Realistic Occlusion Handling for Augmented Reality Applications**
Anna Katharina Hebborn - University Koblenz-Landau, Koblenz, RLP, Germany, Nils Höhner - University Koblenz-Landau, Koblenz, Germany, Stefan Mueller - University Koblenz-Landau, Koblenz, Germany
· **Occlusion Leak Compensation for Optical See-Through Displays using a Single-layer Transmissive Spatial Light Modulator**
Yuta Itoh - Keio University, Yokohama, Kanagawa, Japan, Takumi Hamasaki - Keio University, Yokohama, Kanagawa, Japan, Maki Sugimoto - Keio University, Yokohama, Japan
· **Real-Time View Correction for Mobile Devices**
Thomas Schöps - ETH Zurich, Zürich, Switzerland Martin Oswald - ETH Zurich, Zürich, Switzerland, Pablo Speciale - ETH Zurich, Zürich, Switzerland, Shuoran Yang - Google, Mountain View, California, United States, Marc Pollefeys - ETH Zurich, Zurich, Switzerland

Lunch break 12:30-14:00

Oral session 6: Illumination and consistency 14:00-15:30
Chair: to be announced
· **Natural Environment Illumination: Coherent Interactive Augmented Reality for Mobile and non-Mobile Devices**
Kai Rohmer - Clausthal University of Technology, Clausthal Zellerfeld, Germany, Johannes Jendersie - Clausthal University of Technology, Clausthal-Zellerfeld, Germany, Thorsten Grosch - Clausthal University of Technology, Clausthal-Zellerfeld, Germany
· **Synthesis of Environment Maps for Mixed Reality**
David Walton - University College London, London, United Kingdom Diego Thomas - Kyushu University, Fukuoka, Japan Anthony Steed - University College London, London, United Kingdom Akihiro Sugimoto - National Institute of Informatics, Tokyo, Japan
· **Geometric and Photometric Consistency in a Mixed Video and Galvanoscopic Scanning Laser Projection Mapping System**
Petar Pjanic - Disney Research, Zurich, ZH, Switzerland, Simon Willi - Disney Research, Zürich, ZH, Switzerland, Anselm Grundhoefer - Disney Research, Zürich, ZH, Switzerland
· **Learning Lightprobes for Mixed Reality Illumination**
David Mandl - Graz University of Technology, Institute for Comuter Graphics and Vision, Graz, Austria, Kwang Moo Yi - École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, Peter Mohr - Institut for Computer Graphics and Vision, Graz, Austria, Peter Roth - Institut for Computer Graphics and Vision, Graz, Austria, Pascal Fua - École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, Vincent Lepetit - Graz University of Technology, Graz, Austria, Dieter Schmalstieg - Graz University of Technology, Graz, Austria, Denis Kalkofen - Graz University of Technology, Graz, Austria Monocular

Coffee break 15:30-16:00

Poster teaser group A 16:00-16:30 Auditorium 450

Poster Session A 16:30-18:00 Room 200

· **1 [POSTER] Position Estimation of a Strongly Occluded Object by Using an Auxiliary Point Cloud in Occluded Space**
Shinichi Sumiyoshi
· **3 [POSTER] A Probabilistic Combination of CNN and RNN Estimates for Hand Gesture Based Interaction in Car**
Aditya Tewari, Bertram Taetz, Frederic Grandidier, Didier Stricker

· **5 [POSTER] Fusion of unsynchronized optical tracker and inertial sensor in EKF framework for in-car Augmented Reality delay reduction**
Jason Rambach, Alain Pagani, Sebastian Lampe, Ruben Reiser, Manthan Pancholi, Didier Stricker
· **9 [POSTER] Automated Evaluation and Configuration of Object Tracking for Augmented Reality**
Kevin Thiel, Eduard Jundt, Gudrun Klinker
· **11 [POSTER] DotWarp: Dynamic Object Timewarping for Video See-Through Aug mented Reality**
Peter Kim, Jason Orlosky, Kiyoshi Kiyokawa, Photchara Ratsamee, Tomohiro Mashita
· **13 [POSTER] CamSLAM: Vision aided inertial tracking and mapping framework for large scale AR applications**
Taragay Oskiper, Supun Samarasekera, Rakesh Kumar
· **15 [POSTER] SelfieWall: A Mixed Reality Advertising Platform**
Yu You, Alain Boyer, Tero Jokela, Petri Piippo
· **17 [POSTER] Industrial Augmented Reality: Transferring a Numerical Control connected Augmented Realty System from Marketing to Maintenance**
Christian Kollatsch, Marco Schumann, Philipp Klimant, Mario Lorenz
· **19 [POSTER] Composite Realism: Effects of Object Knowledge and Mismatched Feature Type on Observer Gaze and Subjective Quality**
Alan Dolhasz, Maite Frutos-Pascual, Ian Williams
· **21 [POSTER] Augmented Reality for User-Friendly Intra-Oral Scanning**
Janine Thoma, Michal Havlena, Severin Stalder, Luc Van Gool
· **23 [POSTER] Illumination Estimation using Cast Shadows for Realistic Augmented Reality Applications**
Salma Jiddi, Philippe Robert, Eric Marchand
· **25 [POSTER] Deformed Reality: Proof of concept and preliminary results**
Nazim Houchine, Antoine Petit, Frederick Roy, Stephane Cotin
· **27 [POSTER] A Predictive Approach to On-line Time Warping of Motion Sequences**
Mathew Randall, Ian Williams, Cham Athwal
· **29 [POSTER] Depth Map Interpolation using Perceptual Loss**
Ilya Makarov, Vladimir Aliev, Olga Gerasimova, Pavel Polyakov
· **31 [POSTER] Realtime Generation of Caustic Images Using a Deep Neural Network**
Takurou Okamoto, Yuki Uranishi, Tomohiro Mashita, Photchara Ratsamee, Kiyoshi Kiyokawa, Haruo Takemura
· **33 [POSTER] Further Experiments and Considerations on Weight Perception Caused by Visual Diminishing of Real Objects**
Miho Tanaka, Ayushi Misra, Kana Oshima, Satoshi Hashiguchi, Shohei Mori, Asako Kimura, Fumihisa Shibata, Hideyuki Tamura
· **35 [POSTER] Augmented Reality Assistance in the Central Field-of-View Outperforms Peripheral Displays for Order Picking: Results from a Virtual Reality Simulation Study**
Patrick Renner, Thies Pfeiffer
· **37 [POSTER] Believable Virtual Characters for Mixed Reality**
Jorge Arroyo-Palacios, Richard Marks
· **39 [POSTER] CoVAR: Mixed-Platform Remote Collaborative Augmented and Virtual Realities System with Shared Collaboration Cues**
Thammathip Piumsomboon, Arindam Dey, Barrett Ens, Gun Lee, Mark Billinghurst
· **41 [POSTER] An Accurate Calibration Method for Optical See-Through Head-Mounted Displays Based on Actual Eye-Observation Model**
Zhenliang Zhang, Dongdong Weng, Jie Guo, Yue Liu, Yongtian Wang
· **43 [POSTER] A Benchmark Dataset for 6DoF Object Pose Tracking**
Po-Chen Wu, Yueh-Ying Lee, Hung-Yu Tseng, Hsuan-I Ho, Ming-Hsuan Yang, Shao-Yi Chien
· **45 [POSTER] Walking in Augmented Reality: an experimental evaluation by playing with a virtual hopscotch**
Manuela Chessa, Fabio Solari
· **47 [POSTER] ORBFusion: Real-time and Accurate dense SLAM at large scale**
Juting Dai, Xinyi Tang, Leif Oppermann
· **49 [POSTER] Efficient Pose Selection for Interactive Camera Calibration**
Pavel Rojtberg, Arjan Kuijper
· **51 [POSTER] Mixed Reality Support for Orthopaedics Surgery**
Sing Chun Lee, Bernhard Fuerst, Javad Fotouhi, Alex Johnson, Keisuke Tateno, Federico Tombari, Greg Osgood, Nassir Navab
52 [POSTER] Feasibility of Corneal Imaging for Handheld Augmented Reality
Daniel Schneider, Jens Grubert
· **53 [POSTER] Reactive Displays for Virtual Reality**
S S Srinivas Rao G, Neeraj Thakur, Vinay Namboodiri
· **55 [POSTER] BrightView: Increasing Perceived Brightness in Optical See-Through Head-Mounted Displays**
Shohei Mori, Sei Ikeda, Christian Sandor, Alexander Plopski
· **57 [POSTER] Enhanced Personalized Targeting Using Augmented Reality**
Gaurush Hiranandani, Kumar Ayush, Atanu Sinha, Sai Varun Reddy Maram, Chinnaobireddy Varsha Chinnaobireddy, Pranav Maneriker
· **59 [POSTER] Lightning Markers: Synchronization-free Single-shot Detection of Imperceptible AR Markers Embedded in a High-Speed Video Display**
Tsutomu Kusanagi, Shingo Kagami, Koichi Hashimoto
· **61 [POSTER] Optimizing Background Subtraction for OST-HMD**
Jae-Woo Kim, Je-Ho Ryu, Seung-Su Ryu, Kang-Kyu Lee, Jong-Ok Kim

Gala dinner «Les Machines de l'Ile» - 19:00

Gala Dinner

Wednesday, October 11th 19:00

Share an original moment in the universe of « Les Machines de l'Ile in the industrial ware-houses

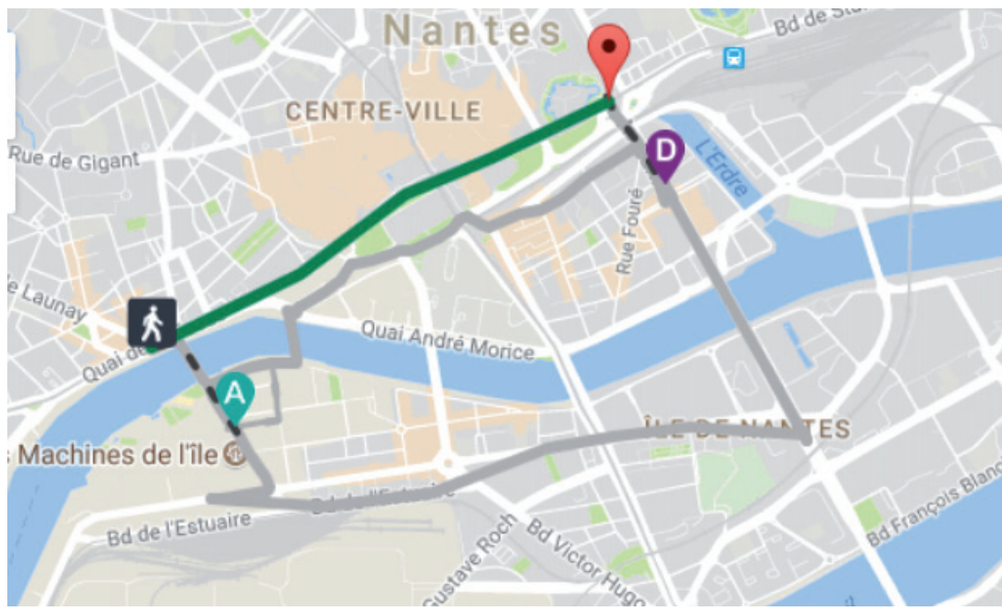
« Les Machines de l'île » is a totally unprecedented artistic project. Born from the François Delarozière and Pierre Orefice's imagination, it is at crossroads of Jules Verne's «invented worlds», of the mechanical universe of Leonardo da Vinci, and of Nantes' industrial history, on the exceptional site of the former shipyards.

Adress : Les Machines de l'île 2 Boulevard Léon Bureau - Nantes

How to come Departure Cité Internationale des Congrès ?

· Get there on foot Duchesse Anne-Chateau (300 meters)
· Get in at Duchesse Anne-Chateau **Tramway 1** to Jamet (Nantes)
· Get off at Chantiers Navals (Duration: 7 min)
· Get there on foot Les machines de l'île (450 meters)

The site of «Machines de l'Ile is not completely closed. In October, evenings can be fresh. it is advised to have with you a warm cloth even if a heating system is planned.



S&T Oral Sessions, Auditorium 450

Oral session 7: Perception 08:30-10:00
Chair: to be announced

· **AR Feels "Softer" than VR: Haptic Perception of Stiffness in Augmented versus Virtual Reality**
Benoît Le Gouis - INSA Rennes, Rennes, France Yoren Gaffary - Inria, Rennes, France, Maud Marchal - INSA Rennes, Rennes, France Ferran Argelaguet - Inria, Rennes, France, Bruno Arnaldi - INSA Rennes, Rennes, Francen Anatole Lécuyer - Inria, Rennes, France
· **Mixed Voxel Reality: Presence and Embodiment in Low Fidelity, Visually Coherent, Mixed Reality Environments**
Holger Regenbrecht - University of Otago, Dunedin, New Zealand, Katrin Meng - University of Koblenz-Landau, Koblenz, Germany, Arne Reepen - University of Koblenz-Landau, Koblenz, Germany, Stephan Beck - Bauhaus-Universitaet Weimar, Weimar, Germany, Tobias Langlotz - University of Otago, Dunedin, Otago, New Zealand
· **A Primer on Spatial Scale and Its Application to Mixed Reality**
Evan Barba - Georgetown University, Washington, DC, United States, Ramon Zamora Marroquin - Georgetown University, washington, District of Columbia, United States
· **Designing for Depth Perceptions in Augmented Reality**
Catherine Diaz - University of Colorado Boulder, Boulder, Colorado, United States Michael Walker - University of Colorado Boulder, Boulder, Colorado, United States Danielle Szafir - University of Colorado Boulder, Boulder, Colorado, United States Daniel Szafir - University of Colorado Boulder, Boulder, Colorado, United States

Coffee break 10:00-10:30

Oral session 8: Applications 10:30-12:00
Chair: to be announced

· **Recent Developments and Future Challenges in Medical Mixed Reality**
Long Chen - Bournemouth University, Bournemouth, United Kingdom, Thomas Day - University of Chester, Chester, United Kingdom, Wen Tang - Bournemouth University, Poole, United Kingdom, Nigel John - University of Chester, Chester, United Kingdom
· **A Multiple-View Geometric Model of Specularities on Non-Planar Shapes with Application to Dynamic Retexturing**
Alexandre Morgand - CEA-LIST, Saclay, France, Mohamed Tamaazousti - CEA-LIST, Saclay, France, Adrien Bartoli - CNRS, Clermont-Ferrand, Auvergne, France
· **3D-FRC: Depiction of the future road course in the Head-Up-Display**
Christian Wiesner - Robert Bosch GmbH, Leonberg, Germany, Mike Ruf - Karlsruhe University of Applied Sciences, Karlsruhe, Baden-Württemberg, Germany, Demet Sirim - Robert Bosch GmbH, Leonberg, Germany, Gudrun Klinker - Technische Universität München, Munich, Germany
· **Assessing Upper Extremity Motor Dysfunction Using an Augmented Reality Game**
Marina A. Cidota - Delft University of Technology, Delft, Netherlands, Paulina J.M. Bank - Leiden University Medical Center, Leiden, Netherlands, P. (Elma) W. Ouwehand - Leiden University Medical Center, Leiden, Netherlands, Stephan G. Lukosch - Delft University of Technology, Delft, Netherlands

Lunch break 12:00-13:30

Oral session 9: Usability and acceptance 13:30-14:30
Chair: to be announced

· **Exploring the Hype: Investigating Technology Acceptance Factors of Pokémon Go**
David Harborth - Goethe-University Frankfurt, Frankfurt, Hesse, Germany, Sebastian Pape - Goethe University Frankfurt, Frankfurt, Hessen, Germany
· **Cognitive Cost of Using Augmented Reality Displays**
James Baumeister - University of South Australia, Adelaide, South Australia, Australia Seung Youb Ssin - University of South Australia, Adelaide, South Australia, Australia Neven A. M. ElSayed - University of South Australia, Adelaide, Australia, Jillian Dorrian - University of South Australia, Adelaide, South Australia, Australia, Ross Smith - University of South Australia, Adelaide, Australia, David Webb - University of South Australia, Adelaide, South Australia, Australia, James A. Walsh - University of South Australia, Adelaide, South Australia, Australia, Mark Kohler - University of South Australia, Adelaide, South Australia, Australia, Bruce Thomas - University of South Australia, Adelaide, Australia
· **Empirical Study of Non-Reversing Magic Mirrors for Augmented Reality Anatomy Learning**
Felix Bork - Technische Universität München, Munich, Germany, Roghayeh Barmaki - Johns Hopkins University, Baltimore, Maryland, United States, Ulrich Eck - Technische Universität München, Munich, Germany, Kevin Yu - Technische Universität München, Munich, Germany Christian Sandor - Nara Institute of Science and Technology, Ikoma, Nara, Japan, Nassir Navab - Technische Universität München, Munich, Germany

Panel 1 14:30-15:30 Auditorium 150

Poster teaser group B 15:30-16:00 Auditorium 450

Coffee break 16:00-16:30

Poster Session B 16:30-18:00 Room 200

· **2 [POSTER] Decision Forest For Efficient and Robust Camera Relocalization**
Amine Kacete, Thomas Wentz, Jérome Royan

· **4 [POSTER] The Social AR Continuum: Concept and User Study**
Alaeddin Nassani, Gun Lee, Mark Billinghurst, Tobias Langlotz, Simon Hoermann, Robert W. Lindeman
· **6 [POSTER] Holographic iRay: Exploring Augmentation for Medical Applications**
Tian Xie, Mohammad Mainul Islam, Alan Lumsden, Ioannis Kakadiaris
· **7 [POSTER] Augmented Things: Enhancing AR Applications leveraging the Internet of Things and Universal 3D Object Tracking**
Jason Rambach, Alain Pagani, Didier Stricker
· **8 [POSTER] Consistency between reflection on the glass and virtual object in augmented reality**
Naoki Shinozuka, Yoshitsugu Manabe, Noriko Yata
· **10 [POSTER] Hybrid Video/Optical See-Through HMD**
Fabrizio Cutolo, Umberto Fontana, Marina Carbone, Renzo D'Amato, Vincenzo Ferrari
· **12 [POSTER] The Augmented Library: An Approach for Improving Users Awareness in a Campus Library**
Albert Aaron Cervera-Uribe
· **14 [POSTER] Design and Implementation of a Common Dataset for Comparison and Evaluation of Diminished Reality Methods**
Taiki Morozumi, Shohei Mori, Sei Ikeda, Fumihisa Shibata, Asako Kimura, Hideyuki Tamura
· **16 [POSTER] Halo3D: a Technique for Visualizing Off-Screen Points of Interest in Mobile Augmented Reality**
Patrick Perea, Denis Morand, Laurence Nigay
· **18 [POSTER] AirGestAR: Leveraging Deep Learning for Complex Hand Gestural Interaction with Frugal AR Devices**
Varun Jain, Ramakrishna Perla, Ramya Hebbalaguppe, Brett Ridel, Patrick Reuter, Nadine Couture
· **22 [POSTER] Semantic Augmented Reality Environment with Material-Aware Physical Interactions**
Long Chen, Karl Francis, Wen Tang
· **24 [POSTER] Usability Analysis of an off-the-shelf Hand Posture Estimation Sensor for Freehand Physical Interaction in Egocentric Mixed Reality**
Andrea-Dalia Blaga, Maite Frutos-Pascual, Muadh Al-Kalbani, Ian Williams
· **26 [POSTER] MR TV Mozaik: A New Mixed Reality Interactive TV Experience**
Matthieu Fradet, Caroline Baillard, Anthony Laurent, Tao Luo, Philippe Robert, Vincent Alleaume, Pierrick Jouet, Fabien Servant
· **28 [POSTER] Development of a haptic device with tactile and proprioceptive feedback for spatial design tasks**
Tim Bakker, Jouke Verlinden, David Abbink, Roel van Deventer
· **30 [POSTER] Volume Lens: Exploring Medical Volume Datasets using Mobile Devices**
Chris Heinrich, Tobias Langlotz, Richard O'Keefe
· **32 [POSTER] Background Image Registration as a Post-Processing Technique in Diminished Reality Rendering Procedures**
Shohei Mori, Jianing Qie, Sei Ikeda, Fumihisa Shibata, Asako Kimura, Hideyuki Tamura
· **34 [POSTER] Planning-based Workflow Modeling for AR-enabled Automated Task Guidance**
Fei Han, Jiayi Liu, William Hoff, Hao Zhang
· **36 [POSTER] Social Augmentations in Multi-User Virtual Reality: A Virtual Museum Experience**
Daniel Roth, Constantin Kleinbeck, Tobias Feigl, Christopher Mutschler, Marc Erich Latoschik
· **38 [POSTER] Mutually Shared Gaze in Augmented Video Conference**
Gun Lee, Seungwon Kim, Youngho Lee, Arindam Dey, Thammathip Piumsomboon, Mitchell Norman, Mark Billinghurst
· **40 [POSTER] HoloBee: Augmented Reality Based Bee Drift Analysis**
Huyen Nguyen, Sarah Ketchell, Ulrich Engelke, Bruce Thomas, Paulo de Souza
· **42 [POSTER] ARial Texture: Dynamic Projection Mapping on Drone Propellers**
Soichiro Toyohara, Shio Miyafuji, Hideki Koike
· **44 [POSTER] Two-step gamut mapping for optical see-through displays**
Kang-Kyu Lee, Jae-Woo Kim, Je-Ho Ryu, Jong-Ok Kim
· **46 [POSTER] AR as a User Interface for The Internet of Things - Comparing Three Interaction Models**
Gunter Alce, Maximilian Roszko, Henrik Edlund, Sandra Olsson, Johan Svedberg, Mattias Wallergard
· **48 [POSTER] The impact of the frame of reference on attention shifts between augmented reality and real-world environment**
Andrea Schankin, Daniel Reichert, Matthias Berning, Michael Beigl
· **50 [POSTER] Double Reality: Shifting the Gaze Between the Physical Object and Its Digital Representation**
Lorenzo Lucignano, Pierre Dillenbourg
· **54 [POSTER] An Inertial, Magnetic and Vision Based Trusted Pose Estimation for AR and 3D Data Qualification on Long Urban Pedestrian Displacements**
Nicolas Antigny, Myriam Servières, Valerie Renaudin
· **56 [POSTER] Visualizing In-Organ Tumors in Augmented Monocular Laparoscopy**
Erol Özgür, Alexis Lafont, Adrien Bartoli
· **58 [POSTER] Prevention of Visually Induced Motion Sickness Based on Dynamic Real-time Content-aware Non-salient Area Blurring**
Guangyu Nie, Yue Liu, Yongtian Wang
· **60 [POSTER] ChiroChroma: An Augmented Reality Game for the Assessment of Hand Motor Functionality**
Jeffrey Goderie, Rustam Alashrafov, Pieter Jockin, Lu Liu, Xin Liu, Marina Cidota, Stephan Lukosch

Closing ceremony 18:00-18:30 - Auditorium 450

Friday, October 13th

Workshops - 9:00-10:30 / 11:00-12:30 - Room G-H

W2 - Enterprise AR Adoption Obstacles - 9:00-12:30
Organizer:
· Christine Perey (PEREY Research & Consulting)

This workshop focuses on the adoption of AR for improving the operational performance of enterprise and industrial workplaces. Enterprise AR has been in pilot and prototype phase, largely led by research teams in large organizations, for over a decade. Nevertheless, wide scale deploy continues to face many obstacles. The workshop will seek to identify obstacles and to provide practical, data-driven measures and solutions to addressing obstacles identified by participants and members of the AR for Enterprise Alliance (AREA), the world's only membership-driven organization focusing on enterprise AR adoption.
The topics and questions on which this workshop will focus include:
· Identification and classification of current and future enterprise AR adoption barriers
· Appropriate measurement of enterprise AR adoption (penetration levels)
· How to balance research and production-grade systems in enterprise environments
· Design for success in enterprise AR introduction projects
· Organizational measures to reduce enterprise AR adoption obstacles
· Technology-supported measures to reduce enterprise AR adoption obstacles
More information: http://www.perey.com/ISMAR2017-Workshop-on-Enterprise-AR-Obstacles/

W3 - Standards for Mixed and Augmented Reality - 9:00-12:30 / 13:30-17:00
Organizers:
· Gerard J. Kim (Korea University, South Korea)
· Jérôme Royan (Technological Research Institute b<>com, France)
· Marius Preda (Institut MINES-Telecom, France)

Mixed and augmented reality (MAR) is on the brink of large-scale consumer level commercialization. Standards will be required for MAR to succeed and proliferate as an information media and new contents platform. Standards will enable the development of MAR system components able to interoperate through defined interfaces and hence will enable the development of end-to-end solutions built on system components easily plugged in together to achieve contents sharing and interoperability. The workshop will be a place to present existing standards and demonstrate how they could ease the adoption of MAR in many domains, a place to present recent initiatives in order to coordinate efforts and share requirements coming from the industry. The discussion will lay a foundation to many issues of standardization for MAR: proper subareas for standards and abstract levels, physical and environment object representation, content file format, calibration process, tracking and recognition, augmentation and display style standards, sensors and processing units dedicated to MAR, standards for non-visual and multimodal augmentation, object feature presentation, benchmarking, Industry requirements, etc.
More information: https://arstandardsworkshop17.wordpress.com/

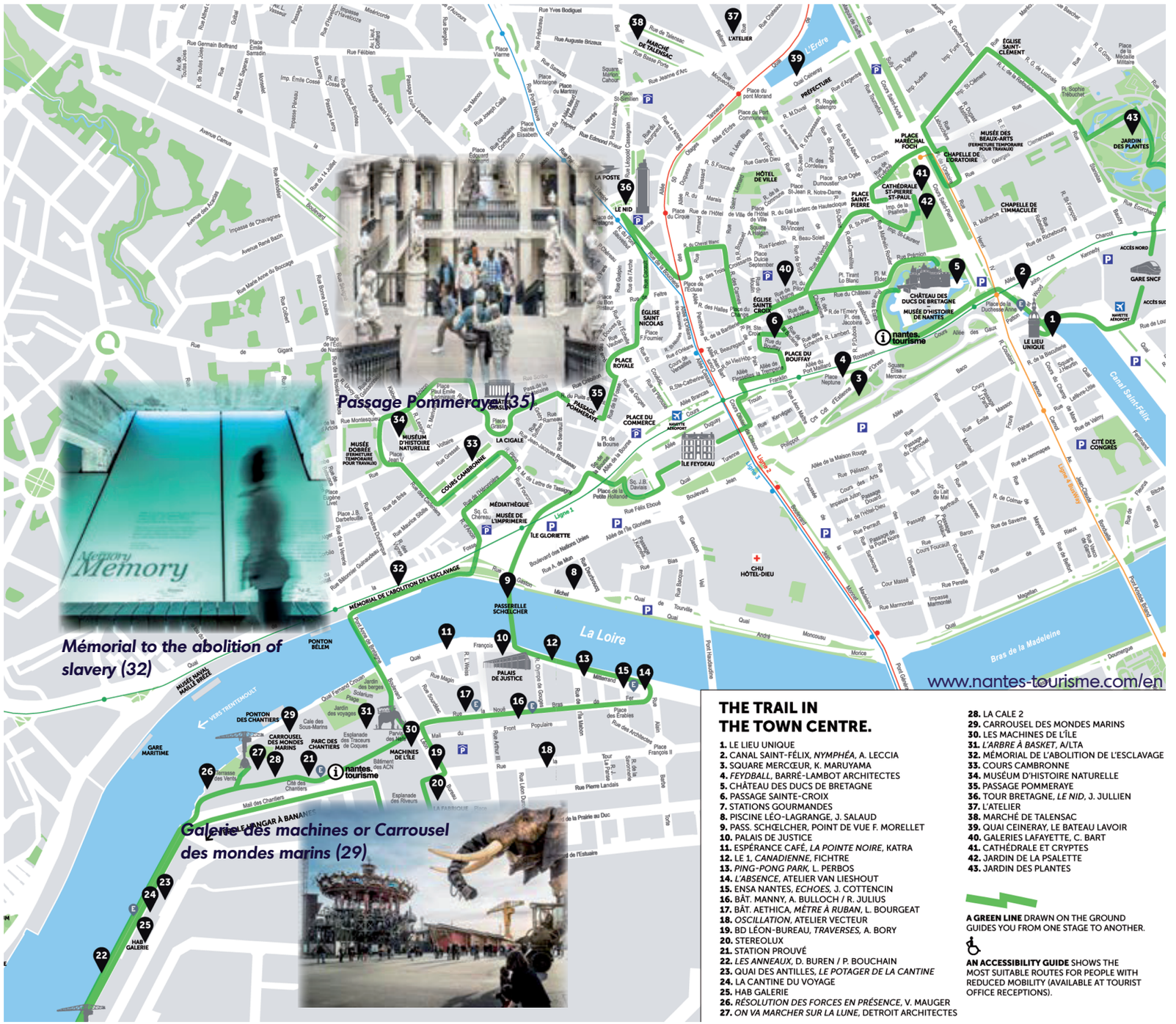
W4 - VR and AR meet Creative Industries - 9:00-12:30 / 13:30-17:00
Organizers:
· Toinon Vigier (Université de Nantes, France)
· Carola Moujan (Ecole Supérieure des Beaux-Arts Tours Angers Le Mans, France)
· Jacques Gilbert (Université de Nantes, France)

The production of new virtual reality (VR) and augmented reality (AR) experiences tackle both technical, human and creative aspects. In this workshop, we would like to invite contributions mixing creative and technological viewpoints in order to share common understandings and lessons to provide better experiences for the final users. In this context, the workshop aims to foster participation of artists and designers as humanities scientists (philosophy, literature, etc.) to meet up with usual ISMAR attendance.
Mainly we are interested with (but not limited to) the following themes and topics of interest:
· Innovative interaction design with consumer grade multimedia VR/AR systems
· User feedback and Quality of Experience assessment for VR/AR content creation
· Quality of Experience as an artistic intention in VR/AR
· Usage of VR/AR technologies in art performances and design
· Narrative studies/Storytelling in VR/AR
· Create in/with VR/AR, VR/AR platforms/tools to support design and art creation
More information: http://ismar-creativeindustries.polytech.univ-nantes.fr

W7 - Highly Diverse Cameras and Displays for Mixed and Augmented Reality (HDCD-4MAR) - 9:30-12:30 / 13:30-16:30
General Chairs:
· Hideo Saito (Keio University, Japan)
· Shohei Mori (Keio University, Japan)
Workshop Organizing Chair:
· Sei Ikeda (Ritsumeikan University, Japan)

Computer vision technology has evolved AR/MR to a point and given AR/MR communities fruits to solve unique problems in AR/MR. To bring AR/MR to the next level, we need to investigate a way to fully utilize these fruits. From this point of view, in this workshop, HDCD4MAR, we focus on bringing opportunities to researchers to discuss experiences and findings on vision-based approaches especially regarding the diversity of input and output devices that would exist in the AR/MR environments or be brought there by the AR/MR users. We expect participants from various types of research fields such as multi-view stereo, computational photography, vSLAM, light field displays, etc. and workshop will give chances them for future collaboration.
More information: http://www.hvrl.ics.keio.ac.jp/hdcd4mar/

Pratical information :
Coffee Breaks: 10:30-11:00 - 15:30-16:00
Lunch: 12:30- 13:30



THE TRAIL IN THE TOWN CENTRE.

1. LE LIEU UNIQUE
2. CANAL SAINT-FÉLIX, *NYMPHÉA*, A. LECCIA
3. SQUARE MERCŒUR, K. MARUYAMA
4. *FEYDBALL*, BARRÉ-LAMBOT ARCHITECTES
5. CHÂTEAU DES DUCS DE BRETAGNE
6. PASSAGE SAINTE-CROIX
7. STATIONS GOURMANDES
8. PISCINE LÉO-LAGRANGE, J. SALAUD
9. PASS. SCHŒLCHER, POINT DE VUE F. MORELLET
10. PALAIS DE JUSTICE
11. ESPÉRANCE CAFÉ, *LA POINTE NOIRE*, KATRA
12. LE 1, *CANADIENNE*, FICHTRE
13. *PING-PONG PARK*, L. PERBOS
14. *L'ABSENCE*, ATELIER VAN LIESHOUT
15. ENSA NANTES, *ECHOES*, J. COTTENCIN
16. BÂT. MANNY, A. BULLOCH / R. JULIUS
17. BÂT. AETHICA, *MÈTRE À RUBAN*, L. BOURGEAT
18. *OSCILLATION*, ATELIER VECTEUR
19. BD LÉON-BUREAU, *TRAVERSES*, A. BORY
20. STEREOLUX
21. STATION PROUVÉ
22. *LES ANNEAUX*, D. BUREN / P. BOUCHAIN
23. QUAI DES ANTILLES, *LE POTAGER DE LA CANTINE*
24. LA CANTINE DU VOYAGE
25. HAB GALERIE
26. *RÉSOLUTION DES FORCES EN PRÉSENCE*, V. MAUGER
27. *ON VA MARCHER SUR LA LUNE*, DETROIT ARCHITECTES
28. LA CALE 2
29. CARROUSEL DES MONDES MARINS
30. LES MACHINES DE L'ÎLE
31. *L'ARBRE À BASKET*, A/LTA
32. MÉMORIAL DE L'ABOLITION DE L'ESCLAVAGE
33. COURS CAMBRONNE
34. MUSÉUM D'HISTOIRE NATURELLE
35. PASSAGE POMMERAYE
36. TOUR BRETAGNE, *LE NID*, J. JULLIEN
37. L'ATELIER
38. MARCHÉ DE TALENSAC
39. QUAI CEINERAY, LE BATEAU LAVOIR
40. GALERIES LAFAYETTE, C. BART
41. CATHÉDRALE ET CRYPTES
42. JARDIN DE LA PSALETTE
43. JARDIN DES PLANTES

A GREEN LINE DRAWN ON THE GROUND GUIDES YOU FROM ONE STAGE TO ANOTHER.

AN ACCESSIBILITY GUIDE SHOWS THE MOST SUITABLE ROUTES FOR PEOPLE WITH REDUCED MOBILITY (AVAILABLE AT TOURIST OFFICE RECEPTIONS).

Château des Ducs de Bretagne (5)

The Water mirror (5)

Cathedral (41)

Le Nid, Panoramic Balcony Tour Bretagne (36)

ISMAR 2017

Information - contact :

ismar2017@sciencesconf.org

La Cité, Nantes Events Center
5 rue de Valmy
44000 Nantes - France
www.lacite-nantes.com