



# Interactive digital storytelling – the future of media communications

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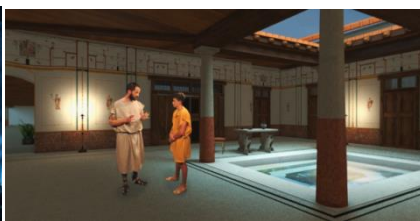
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# Sarajevo Graphics Group

- research laboratory founded in 2005 at the Faculty of Electrical Engineering, University of Sarajevo, Bosnia and Herzegovina
- research areas: computer graphics, computer animation, visual arts, multimedia, interactive digital storytelling
- members: computer scientists, artists, archaeologists, historians, writers, film and video professionals, musicians
- projects:
  - cultural heritage virtual presentations
  - virtual museums





# New Media challenges

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- People read less and less
- Attention span is getting shorter and shorter
- Media information – ON DEMAND
- CHALLENGE: how to communicate information to such an audience
- Our proposal: interactive digital storytelling
- In short: divide information into small chunks, hierarchically connected, and kindle the interest of users to explore deeper in the structure
- We tested this concept on virtual cultural heritage presentations





# Interactive digital storytelling

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- Storytelling breathes life into cultural heritage virtual reconstructions<sup>1</sup>
- Digital Storytelling: the narrative entertainment that reaches the audience via digital technology and media<sup>2</sup>
- Interactive Digital Storytelling (IDS) involves the user into the storytelling process
- Typical demands of IDS applications for cultural heritage presentations:
  - usually consist of stories, interactive 3D models of cultural heritage (CH) artifacts and interactive virtual environments (IVE) presenting reconstructions of cultural monuments' original appearance.
  - users can virtually explore the IVEs, watch or listen to the stories and learn about the purpose and historical context of selected objects
  - The applications are usually on-line or accessible for mobile download, but they can as well be set up in a museum.
  - Some of them introduce augmented reality elements for combining the digital content with landmarks and on site elements.

1 Rizvić, S., How to Breathe Life into Cultural Heritage 3D Reconstructions, (2017) European Review, 25(1), pp. 39–50

2 C. Handler Miller, Digital Storytelling: A Creator's Guide to Interactive Entertainment, Focal Press, 2004.

# H2020 iMARECulture

- Advanced VR, **iM**mersive serious games and **A**ugmented **RE**ality as tools to raise awareness and access to European underwater **CULTURAL** heritage
- **GOAL:** to raise public awareness of European identity by focusing in maritime cultural heritage, which by default bridges different civilizations.



- In simple words – to unsink the sunken cultural heritage
- Sarajevo graphics Group's role: interactive digital storytelling



# Sarajevo Charter guidelines for IDS

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- Developed within iMARECULTURE project by experts from computer science, visual arts, literature, film directing, psychology, communicology and human computer interaction
- new IDS method: hyper-storytelling
- Guidelines<sup>3</sup>:
  - engage professionals for all content creation fields
  - all content has to have unique visual identity
  - use multimedia and virtual reality
  - divide content in sub stories which can be watched independently
  - stories should be short, dynamic and informative
  - use characters to communicate emotion and raise edutainment value
  - introduce motivation factor to solve the narrative paradox
  - create IDS application to be platform independent



# VR Interactive digital storytelling

- VR stories convey the information to the user while using the immersive potential of his/hers virtual surroundings
- VR video – great potential for user immersion
- CHALLENGE: the rules of film grammar do not apply any more
- no staging or directing the story, as our viewer can now turn around and watch the content in a 360 field of view



# Case study: Baiae storytelling

- Baiae – the Las Vegas of the Roman empire, now archeological park, half under the sea
- Dry visit will consist of underwater environment simulation and 360 videos of a recreated villa with actors



The story: the rich aristocrat is buying a statue from a sculptor to decorate the garden of his lavish villa





# Case study: Baiae storytelling



- Gameplay video



# Case study: Baiae storytelling



- VR stories





# Case study: Mostar cliff diving

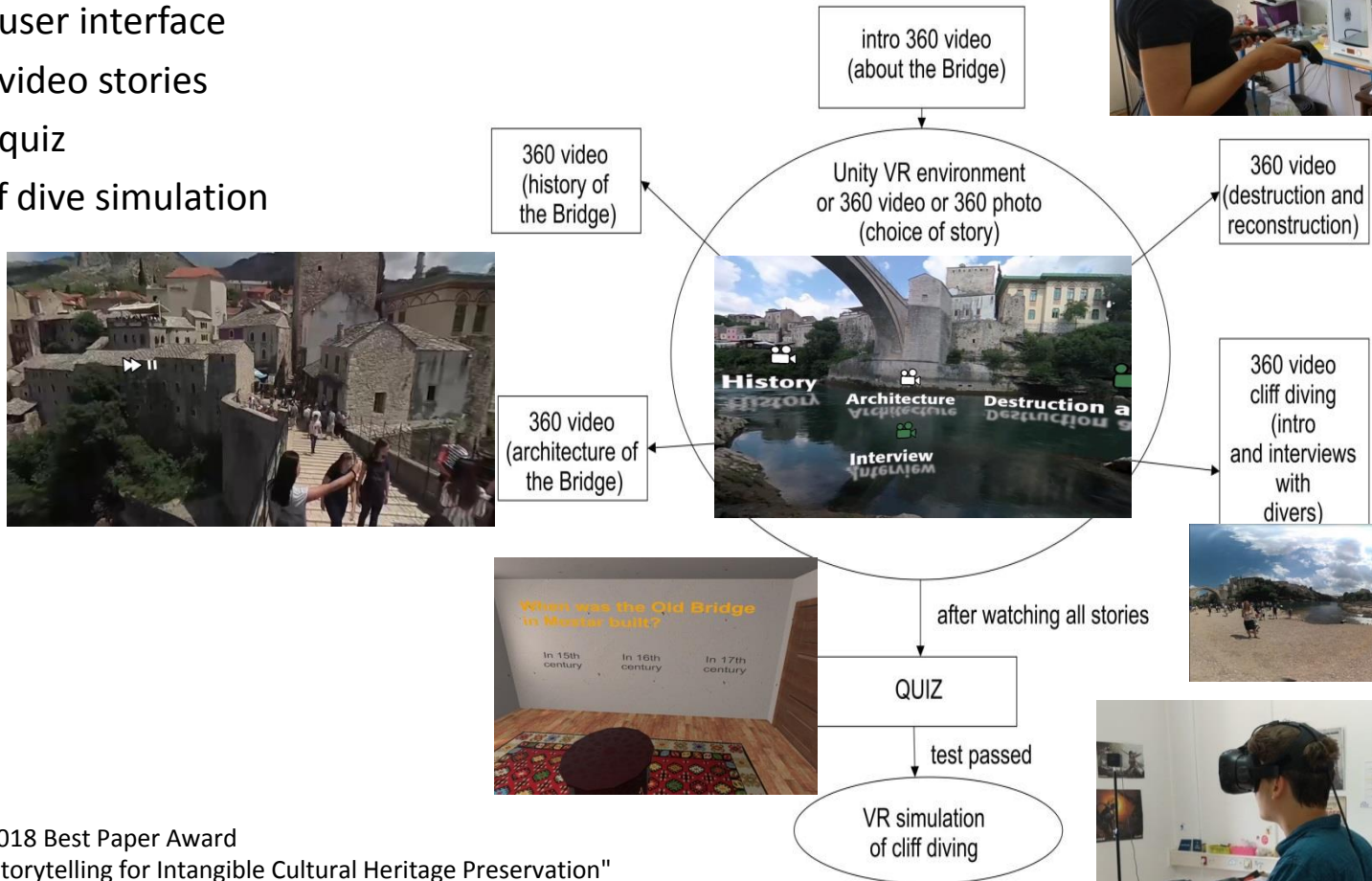
- 300 years old tradition
- Old Bridge in Mostar - UNESCO world heritage site
- Built in 16th century, destroyed in 1993, rebuilt in 2004
- competitions every summer





# Case study: Mostar cliff diving<sup>4</sup>

- GOAL – edutainment
- VR user interface
- VR video stories
- 3D quiz
- Cliff dive simulation

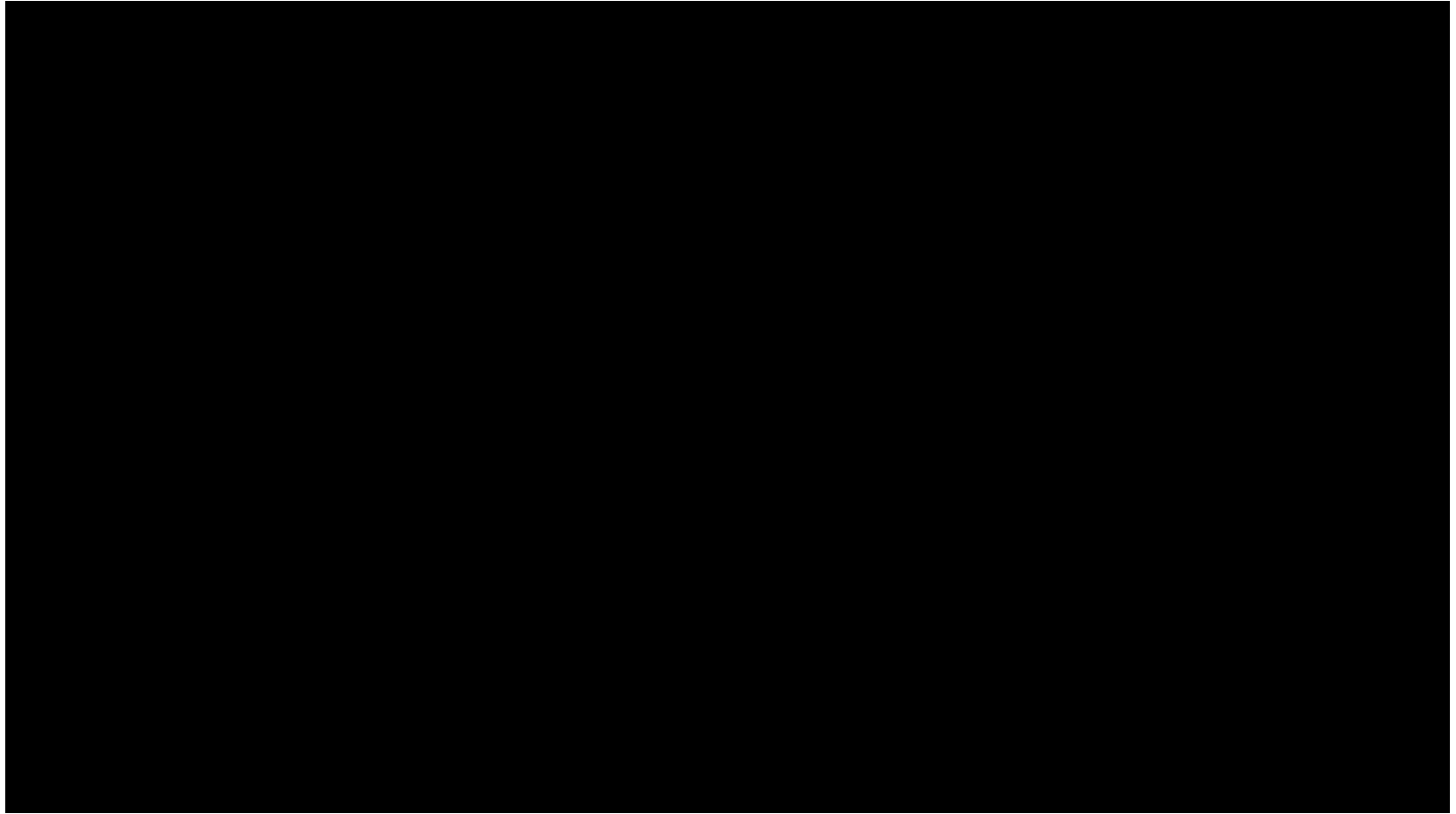


4 EG GCH 2018 Best Paper Award  
 "VR Video Storytelling for Intangible Cultural Heritage Preservation"  
 by E. Selmanovic, S. Rizvic, C. Harvey, D. Boškovic, V. Hulusic, M. Chahin and S. Šljivo





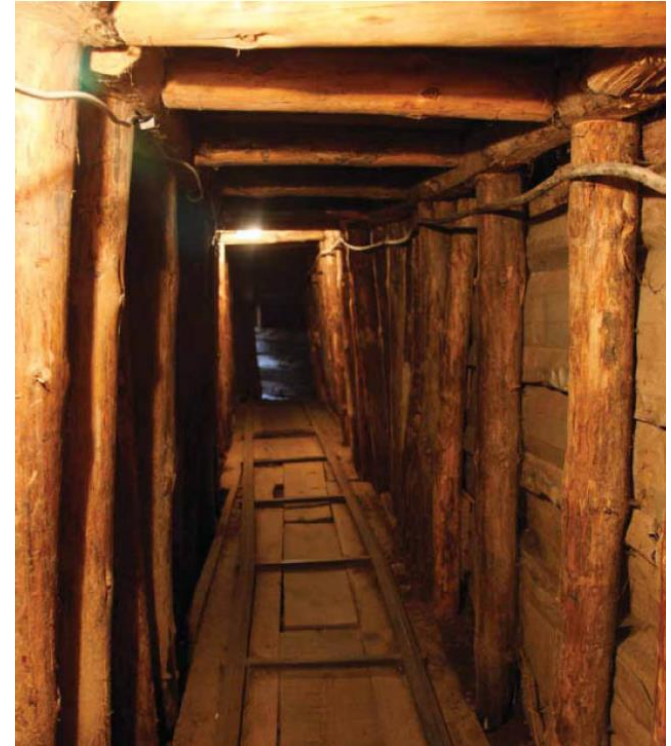
# Case study: Mostar cliff diving





# Work in progress: the Tunnel

- Some cultural and historical heritage artifacts and monuments cannot be visited or explored anymore
- Tunnel of hope enabled people to cross from the besieged city of Sarajevo to the free territory, bringing essential amounts of food, medical equipment, and weapons.
- The Tunnel was crucial for the defense of the city during the war in the 1990s. Presently, it is only partially accessible to visitors.
- **The Sarajevo War Tunnel VR project** aims to provide the users with the unique war experience of passing through the Sarajevo Tunnel of hope using immersive virtual reality





# Work in progress: the Tunnel

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- Simulation gameplay





# Conclusion

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- New media demand different approach in communicating information
- We need to motivate viewers to watch our content
- Hyper-storytelling might be a solution
- VR video adds to user immersion
- Film language grammar needs to be rewritten for this purpose
- The viewer becomes a participant in the story
- Interactive digital storytelling – the future of media communications





# Thank you!

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<http://people.etf.unsa.ba/~srizvic/sgg.htm>