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Bringing museums to life

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The CHESS system allows people to look inside an Ariane space rocket.

Manoeuvring a satellite into its housing inside an Ariane space launcher is almost as difficult as rearranging the order of the planets that orbit around the sun.

At least that's the hope of developers of a new technology that was used to guide visitors around the Cité de l'espace theme park in Toulouse, southern France. They have created an interactive game that asks visitors to rearrange the planets according to their distance from the sun, and to place a satellite within a space launcher.

The system, developed by the EU-funded CHESS project, uses advanced media and interactive content such as 3D and augmented reality – an annotated version of museum exhibits seen through the camera of a smartphone or tablet.

'It means museum visits are no longer linear,' said Dr Olivier Balet, who coordinated the CHESS project.

'They are constantly adapted to your profile and skills. If you expressed a preference, failed in a game, or if you stay longer in front of certain artefacts, then the system can adapt the storyline, instead of sending you to the next exhibit it may send you to another exhibit where you will get more information.'

If, for example, you didn't know that Jupiter comes after Mars but before Saturn, the system could send you back to learn more about it.

In the Acropolis Museum in Athens, Greece, the technology developed by CHESS was used to show visitors the details and original colours of the ancient white marble Greek statues, identified by researchers at the museum.

> 'It means museum visits are no longer linear.'
>
> *Dr Olivier Balet, coordinator of the CHESS project*

Tailored visits

While the use of augmented reality to enhance museum visits is not new – it has been available in the British Museum, in the UK, since 2009 – the difference with the CHESS system is that it can be authored by museum teams, without the assistance of technical experts, and it is tailored to the different visitors' profiles.

'You can provide something interactive to visitors, but if it does not fit their skills or their interests, it can turn into a failure,' said Dr Balet. 'It can be, for instance, hard to get the attention of a kid who likes action games when he is presented with a brain-teaser.'

The idea behind the system developed by the CHESS project is also that, unlike other interactive visit and augmented reality systems being used in museums, interactive tours can be created by the museum curators themselves rather than by IT programmers.

It gives museums the chance to constantly create new experiences to try to get people to visit more than once.

'CHESS enhances and personalises the experience of each and every visitor by creating a tailored experience, aimed at an individual's likes, hobbies and interests,' said Professor Yannis Ioannidis, from the University of Athens, one of the CHESS partners.

The EU is working to promote the use of interactive technology to make museums and historial sites more accessible through its Digital Agenda for Europe.

It's funding projects like 3D-PITOTI, which is 3D scanning rock engravings in northern Italy, and PHENICX, which is using web technology and digital multimedia to enhance classical music performances.

Neither of these projects will be completed until 2016, however Dr Balet believes the CHESS system could be commercially available as a downloadable app in two years.

It will only take that long because Dr Balet's company, DIGINEXT, plans to fund the rest of the development and the commercialisation itself, rather than getting outside investment.

'Two years is definitely a very risky timing for us considering the dynamic and momentum of the technology industry, but it is the only way we manage to do that (develop and commercialise the technology using their own funding).'

The CHESS project plans to install a small-scale museum at the EU's Innovation Convention on 10 to 11 March so that visitors to the event can try it out for themselves.

Register here for the Innovation Convention for free, and have a look at the full programme.

Augmented reality

Augmented reality usually refers to an image of the world seen through the camera of a smartphone or tablet that is annotated with internet links, text and images, thanks to geolocation software and image recognition.

It is being used more and more in the tourism industry in the form of downloadable apps, but it is also being used in the construction industry to show builders the location of underground cables, for example, and during combat, where soldiers can see battlefield data projected onto their goggles in real time.

More info

CHESS

Digital Agenda for Europe

3D-PITOTI

PHENICX