

# Augmented and Virtual Reality for Conflict-Related Sexual Violence Accountability

## Pilot Report

Start Date: September 2022

Completion date: December 2023



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# The Team

## **The Pioneer:**

Jaye Ho, Preventing Sexual Violence in Conflict Initiative (PSVI) Lead, FCDO

## **Implementing partners:**

Royal College of Art Helen Hamlyn Centre for Design, Immersonal

## **Independent Experts:**

Indira Knight, Erin Farrell Rosenberg

# The Context

## The problem the pilot sought to address

[Conflict-related sexual violence](#) (CRSV) is a heinous crime that can also constitute international crimes such as war crimes, crimes against humanity, and genocide. Women and girls are primarily victims of CRSV, although sexual violence against men and boys is generating increasing attention.

Achieving justice for these inhumane crimes is difficult. Sexual crimes are underreported even in peacetime, and because of its occurrence during times of instability, prosecuting CRSV crimes can be difficult.

To tackle this impunity, where international courts can be involved, they build up cases against high-profile individuals, usually senior officials of a conflict group who are seen as most responsible for widespread violence of their subordinates.

While the high-profile, public-facing nature of the trial means that efforts to safeguard survivors, such as protecting their identity, are extremely important, current identity protection measures and/or the understanding of such measures may not be enough to reassure survivors to step forward.

Additionally, while for some survivors, testifying in court can be a positive experience, where they can exercise their agency, the process of seeking justice does carry a high risk of re-traumatisation, particularly when a survivor gives courtroom testimony far from their home and when they must describe their experience multiple times.

## The idea conceived for this pilot

The initial pilot idea was to explore the use of augmented and virtual reality (AR/VR) in the context of international courts, with a focus on impacts related to CRSV accountability, a concept focused not only on holding perpetrators accountable to their crimes but providing a sense of justice for survivors and redress for harms caused to them.

Augmented and virtual reality technology could, for example, be used to demonstrate the crime scene and situation context in a three-dimensional space, which might give the court a better understanding of spatial relationships that could help a case. Alternatively, outside of the court process, VR is a powerful tool to generate empathy, and could be useful in increasing support for CRSV survivors. Or virtual reality could be used to better inform survivors of what a courtroom might look and feel like before they give testimony, either virtually or at an international court.

# Goals of the pilot

The pilot explored four interrelated goals focused on testing and scaling AR/VR technologies for use in international courts. This involved adopting a range of methods to:

1. Explore the potential use cases for AR/VR technology within international courts in a broad sense
2. Determine if there are AR/VR solutions that fit the legal parameters of a court, follow a survivor focused approach, and have strong potential for positive impact with CRSV survivors
3. Produce a prototype solution to assess viability and generate evidence of potential positive impact for CRSV survivors
4. Explore how the technology could be scaled up / embedded within international court organisations



*Picture 1: FCDO Pioneer Jaye Ho discussing the pilot with Lord Ahmad of Wimbledon, Prime Minister's Special Representative for Preventing Sexual Violence in Conflict and Minister of State (Middle East, North Africa, South Asia, United Nations and the Commonwealth)*

# Key Activities

To realise the goals outlined above, the pilot completed a range of key activities.

As part of an ideation phase, the team conducted research to determine where along the justice chain potential AR or VR solutions could add value. The International Criminal Court (ICC) was used as an example for this approach. Ideas were assessed on their ability to fit legal parameters of the ICC, as well as allowing for a survivor-based approach. In this early phase, the team reached out to a wide range of international court representatives, including those from the ICC and other special courts.

The team then took part in the Preventing Sexual Violence in Conflict Initiative (PSVI) Conference in November 2022. This provided an opportunity to discuss ideas with a wide range of stakeholders, and to gauge feedback on which of the 11 generated ideas showed the most promise. As part of the conference, the Office of the Prosecutor of the ICC committed to support the pilot in an informal partnership.

Further consultation with the ICC was managed via a steering group, composed of members of the different “organs” of the court (e.g. Office of the Prosecutor, Registry). The steering group’s reflections on the initial ideas informed selection of **courtroom sensitisation** as the main theme for a prototype tool, and allowed for discussion of how the tool might be used by the ICC. With a broad theme for the tool identified, an open tender was launched and a VR developer, Immersonal, was selected to deliver the next phase of work.

Immersonal created a rapid MVP of an immersive courtroom experience, which formed the basis of discussion for what a prototype solution should entail. Discussions were also held with survivor groups and eventually, the use case was narrowed further to a tool to explain the protective measures employed by the court for witnesses who come to the court to give testimony.

Finally, the team produced a prototype solution, which involved the creation of a storyboard and script in consultation with the ICC Office of the Prosecutor (OTP), as well as capturing footage to illustrate the protective measures employed in the courtroom. The prototype solution underwent user testing, which included survivors' representatives as well as people less familiar with the operations of the ICC.

Finally, the pilot outcomes were presented at the Assembly of States Parties Conference of the ICC, in December 2023.

The pilot work was broadly undertaken in Sprints, which are time-boxed units of experimentation that allowed the team to learn and pivot quickly.

- **Sprint 1 (September - November 2022):** Experiments focused on ideation around the use of AR/VR in international courts, as well as to validate these ideas with different stakeholders.
- **Sprint 2 (May - June 2023):** With a technical partner and a broad use case identified (courtroom sensitisation), efforts concentrated on the design considerations of the solution (use of avatar, age-appropriateness of features), as well as how different organs of the court could use a tool to complement existing interactions with survivors.
- **Sprint 3 (July - August 2023):** Activities focused on producing a storyboard whose narrative could satisfy potential witness concerns, and lead to more informed potential witnesses. Further work was made to assess hardware options (headset, controller) from a user experience perspective, which was done with representatives of survivor groups.
- **Sprint 4 (September - December 2023):** this involved the creation of a script that aligns with language used by the OTP, the recording of audio and video, and the eventual production of a prototype tool. The team tested the prototype with survivors and members of the public to understand its usefulness and appropriateness. Discussions were then made with key ICC stakeholders on potential scaling pathways for the technology in the future.

# Findings from pilot activities

## Finding 1: AR/VR tools can be designed to fit the legal parameters of international investigations and support a survivor-based approach.

Key questions the pilot sought to test:

- **Is there a potential AR/VR solution that fits within the legal parameters of international investigations?**
- **Is there a potential AR/VR solution that fits a survivor-based approach?**
- **Can key stakeholders, including an international court, contribute to the pilot's direction?**
- **Can an idea be selected for prototyping that holds potential for significant impact?**

### The methods used for testing:

Jaye Ho, PSVI Lead at the FCDO, brought together a team to take part in a first “Sprint” in September 2022. The team included Indira Knight, Professor Jo-Anne Bichard, and Dr Melanie Flory from the Royal College of Art Helen Hamlyn Centre for Design, and Erin Farrell Rosenberg, adjunct professor at the University of Cincinnati College of Law and an international criminal law specialist.

The team conducted desk-based research and discussions with different international court representatives to:

- Create solution ideas for how AR or VR technology could support CRSV accountability
- Identify if solution ideas align with the legal parameters of international investigations and prosecutions made by the ICC
- Identify a set of practices that would allow them to test a tool with survivors in the future, leaning heavily on the [Murad code](#), a global code of conduct for interacting with CRSV survivors when gathering information and evidence
- Evaluate if there is at least one solution that is compatible with this set of practices
- Evaluate other important considerations such as ethics, safety and privacy, design, accessibility, technical, and cost
- Map the solution ideas onto a survivor journey to highlight where they might be used (Figure 1.)

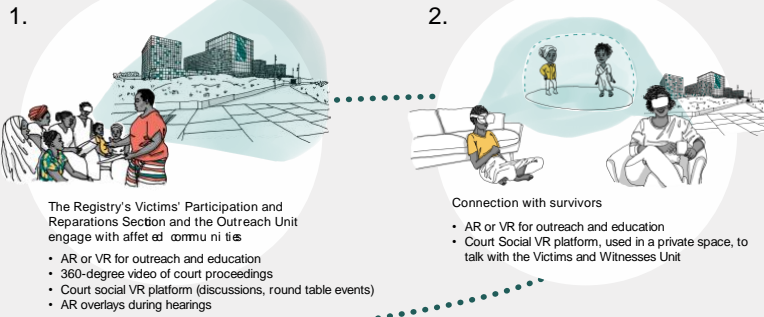
The team then presented the solution ideas and solicited feedback at the Preventing Sexual Violence in Conflict Initiative Conference, which took place in November 2022. The team hosted a market stall and facilitated discussion in dedicated meetings between a wide variety of experts, including those from the ICC, survivors' groups, NGOs, human rights lawyers, and FCDO advisors.

In January 2023, the pilot team visited the ICC Headquarters in The Hague to conduct a feedback session and to prioritise 1-2 ideas to prototype.

### Key findings from testing:

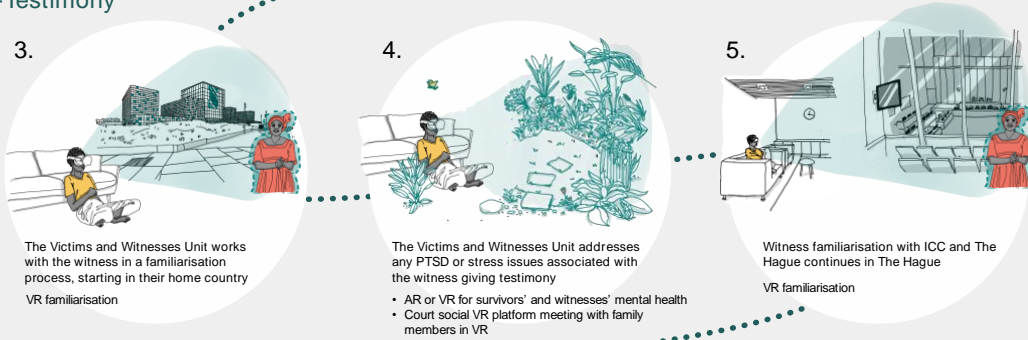
The team was able to produce a list of 11+ use cases, describing the legal considerations and link to the Murad code for each idea (See Annex 1 for more details). Response from the ICC and other stakeholders was positive and validated ideas from both a legal and survivor-based standpoint.

## INVESTIGATION STAGE

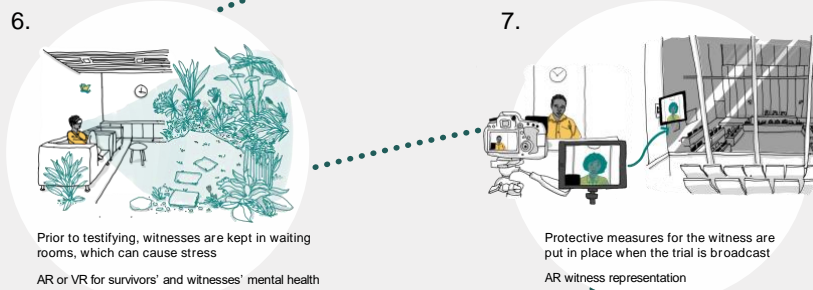


## TRIAL STAGE

### Pre-Testimony

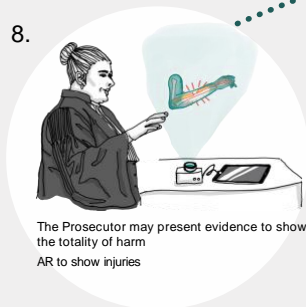


## Trial



## SENTENCING AND REPARATIONS

### Sentencing



### Reparations

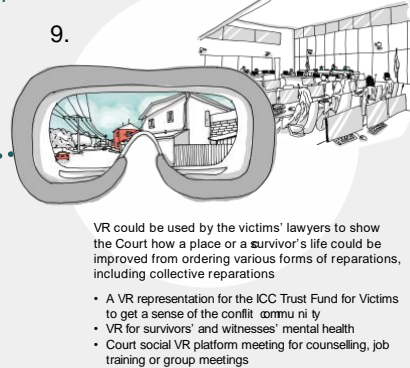


Figure 1: Illustration of where AR/VR technologies could support CRSV accountability across the justice chain



The team later made an agreement to informally partner with the Office of the Prosecutor of the ICC. This helped give confidence that a solution could be developed and there was interest in generating evidence from international courts. The partnership allowed the team to work closely with different organs of the Court to agree on the most promising ideas to prototype. Because of their perceived impact and alignment with existing courtroom processes, the strongest contenders were:

- VR for courtroom familiarisation/sensitisation
- VR for crime scene reconstruction
- AR for representing injuries

Courtroom sensitisation was then chosen as a broad topic and further exploration with the OTP highlighted more specific moments where they might employ a sensitisation tool and where they thought a VR solution might add value (detailed further in Annex 2). This feedback was complemented by a desire from within the pilot team to include an approach that put CRSV survivors at the centre and best explored the additionality of virtual reality technology.

Therefore, in response to survivor feedback, an idea was developed that would present the identity protection measures that might be made available to witnesses when they give testimony in court. In this case, the OTP reaches out to people who are considering becoming witnesses, and a VR product could provide further information about the courtroom process as well as reassurances about the security measures that could be put in place.

Given that some of the barriers to testifying are the risk of reprisals and re-traumatisation, in theory this would better inform survivors by highlighting the special and protective measures that the ICC can adopt during the testifying experience and potentially lead to more survivors seeking justice through enabling them to give more informed consent.

The team decided to create a product that demonstrates some of the mandatory assessed special measures applied to CRSV survivors when they give testimony, which can be put in place as adapted to their needs and to protect their wellbeing, dignity, and privacy. Measures include image alteration, voice distortion, and conducting a closed courtroom session.

The pilot team also wanted to explore if a full court could be represented in VR, perhaps from a real court case, that would in theory allow for greater immersion and familiarity with the courtroom.

Finally, the proposed experience could have a child-friendly version that helps children and their caregivers understand what giving testimony in the courtroom might feel like, and the variety of measures that might be put in place for them.

## **Finding 2: There is a trade-off between user experience and designing for sustainability and future adaptability.**

Key questions the pilot sought to test:

- Can AR/VR technology can be used across different organs of the court, for a variety of purposes?
- Can a tech solution be adjusted for different contexts (culture, language etc.) at low expenditure?
- Are ICC staff able to make these adjustments themselves?
- Can the technology be deployed effectively within situation countries, where discretion and protection of witnesses is paramount?
- What are the periodical costs involved to incorporate VR technology or use a particular VR tool (maintenance, software updates, etc.)?
- Can the solution cut staffing costs in any way, by reducing staff time spent in e.g. sensitisation and courtroom familiarisation?
- Can we identify potential pathways to fund the continued development and rollout of the technology?

### **The methods used for testing:**

Following the ideation phase, the team conducted a procurement process for the technical partner where they outlined the need for a technology with the capacity to:

- Address survivor needs
- Embed the solution within ICC procedures
- Ensure sustainability of the solution

Immersonal, a VR software company, were selected as technical partners. Immersonal's solution allows for a simplified production process that allows non-technical staff to create their own experiences, or to remove or add different features to an existing experience (audio, visual, navigation). This allows for ease of adaptation, and it was therefore hoped that the ICC would be able to adapt future solutions to their own needs.

Discussions with the ICC focused on the sustainability of the solution and particularly the technology and resourcing needed to embed its use. During a visit to the ICC, Immersonal shared examples of similar experiences they created of Scottish courts with Victim Support Scotland. They also recorded footage from inside the ICC courtroom and showcased this to a diverse group of ICC staff.

### **Key findings from testing:**

The pilot team learned that adaptability of the solution and its corresponding sustainability was a fundamental concern for the ICC. They were clear that they did not want a solution to be used for a discrete task and then sit on the shelf unused. It was also clear that ICC budgets are subject to a high level of scrutiny and the additional value of a proposed tool needed to be clear. It was less clear who would take ownership of the solution, particularly if the use cases identified were owned by different organs of the court, and which teams would have the skills and capacity to manage maintenance and adaptation of a tool.

Meeting the need for an adaptable solution had implications for the design of the experience and added constraints. In the case of courtroom sensitisation, adaptability focused on the diversity of potential witnesses, particularly the need for the ICC to translate the tool into multiple languages and dialects. Within the virtual experience, the team initially considered a human actor guide with dubbing for these different languages but decided that the overall user experience for a non-English speaker may be compromised, as

Immersonal's previous experience suggested that as syncing lip movements would not be accurate and might lead to rejection of the immersive experience.

Discussion also focused on whether culturally appropriate actors were important. A green screen was suggested, with the filming of different actors each speaking a particular language or dialect, but this was considered overly costly and therefore not a sustainable solution.

On the other hand, Immersonal's experience working on a similar pilot with Victim Support Scotland suggested that an audio-only guide can often seem like a distraction, especially when entering a new scene or area where the user takes a few seconds to become accustomed to their surroundings, and users often realised that they missed the first few seconds of an audio explanation. The design decision was therefore to have a generic graphical representation of a guide for users to interact with as part of the experience. This would allow the ICC to create their own audio tracks in future without the need to use Immersonal to re-record footage or provide additional avatars.

Another feature that was well received by ICC stakeholders included the potential to use an experience through a tablet or web-browser, particularly for experiences that would be used in a situation country where a high degree of discretion is needed. Other benefits of this feature concerned accessibility but also that it could allow vulnerable users to decide the extent to which they wanted to be immersed in an experience. For example, a user could use the tablet version first, before then repeating an experience using a VR headset.

## **Finding 3: a VR tool could augment existing activities to sensitise CRSV survivors to the courtroom process, with minimal risk of traumatisation**

Key questions the pilot sought to test:

- What type of VR technology is preferable for witness sensitisation (type of headset, controllers, overall user experience)?
- Can an experience storyboard can be created, whose narrative satisfies potential witness concerns when it comes to testifying?
- Can a verbal character script can be created, whose narrative satisfies potential witness concerns when it comes to testifying?
- Will a prototype solution increase users' understanding of ICC provisions for witness testimony (informed consent), including that protection measures are subject to ICC Chambers approval and are not guaranteed?
- Is there any risk of trauma associated with using the headset? Is it minimal or can it be managed?
- Is the experience suitable for adult CRSV survivors and children aged 12+

### **The methods used for testing:**

Once a specific use case was chosen for prototyping, Immersonal created test projects in the Unity 3D game engine to capture the complexity, performance and user engagement trade-offs of different designs. They then tested the Unity projects on both VR and tablet devices, including through a survivor consultation session, where two different headsets were shared and an initial basic courtroom experience (MVP) was presented.

Work then focused on producing a prototype by storyboarding the protective measures. The team analysed typical ICC court sessions, researched policies and procedures surrounding protective measures and identified scenes / situations that could be used to address witness concerns.

They then created a storyboard to connect the scenes in a narrative flow (Figure 2.). Each scene defines a particular location, visual perspective, participating "characters" and props. To create the prototype, the Immersonal team filmed inside an empty ICC courtroom for the second time, with a focus on showing the special and protective measures in action.

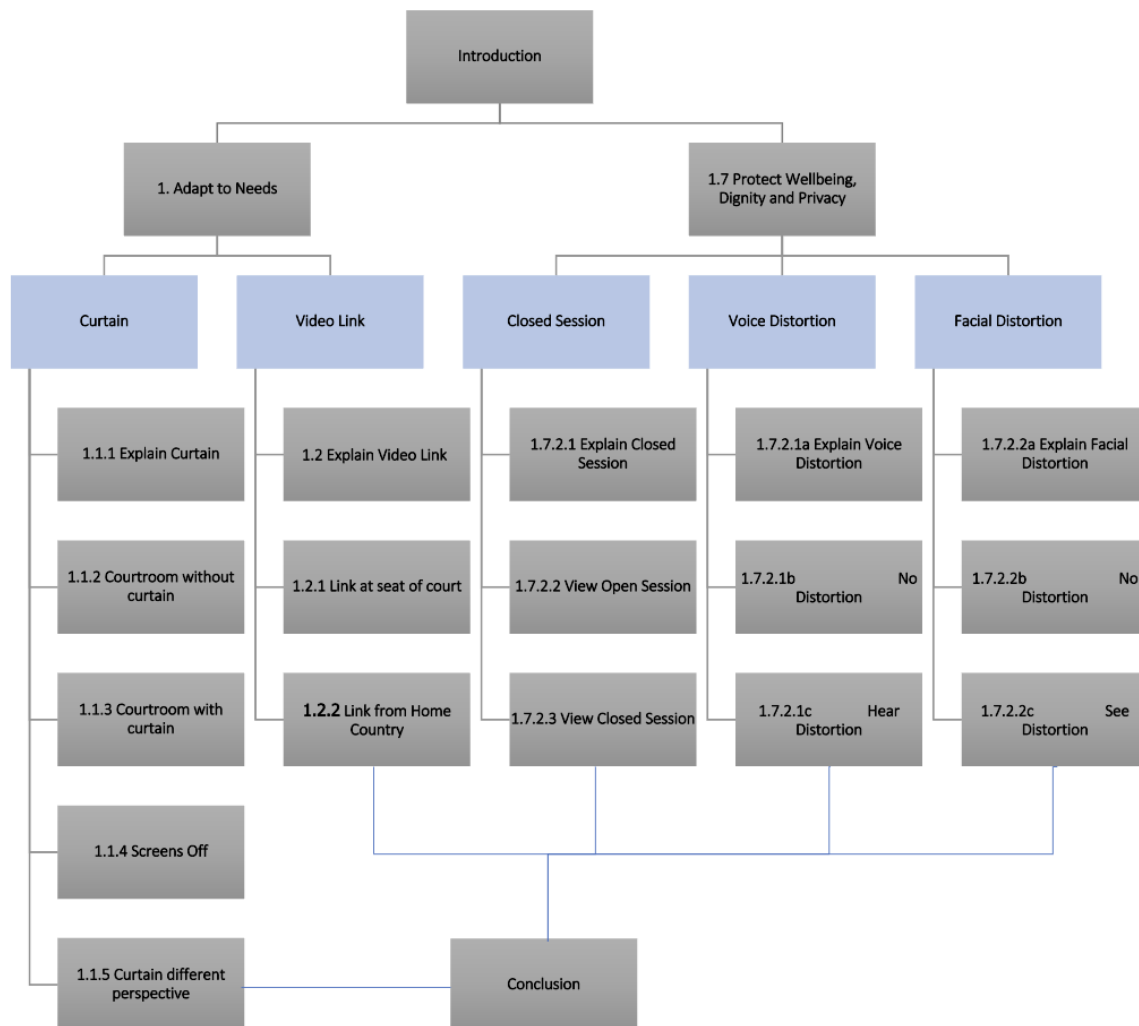


Figure 2: Initial product flowchart for the prototype experience

A script for the accompanying guide was produced for each scene. This was done by bringing in two independent experts, Indira Knight and Erin Farrell Rosenberg, who combined expertise in inclusive service design and understanding of ICC processes. The experts made the script by incorporating elements and reflecting language used in a reference document shared by the OTP. Whilst an ambition of the pilot was to record in multiple languages (such as Arabic, Ukrainian or Rohingya) this wasn't prioritised, and English was chosen as the initial language of the script. English and French are the official languages of the ICC.

Once the prototype tool was produced, a feedback session was conducted with representatives from survivor's groups to gauge feedback on the functionality and usefulness of the tool, as well as the level of psychological safety experienced. The session introduced the participants to the project and the reasons they were being asked for feedback. They then experienced using the VR application and were given space to ask questions and share their own reflections.

To test whether the tool might increase witness understanding of court protection measures, an "A/B" test was conducted with members of the Frontier Tech Hub who were unfamiliar with the work of the pilot and so were deemed representative of the members of the UK public who have little to no prior knowledge of ICC court processes. The team wanted to explore the question: "what knowledge do people gain or lose by applying a VR headset vs. other methods, such as being read the script or being shown a video of the court?".

Like the survivor consultation session, participants were introduced to the project, then split into two groups. One group was shown the VR experience. The other was read a similar script and shown photos of

a courtroom with a facilitator. Participants were then asked to fill out a written questionnaire 15 minutes after their session to understand how much information they had retained from the exercise. Additional feedback and reflections were also sourced for the participants, all of whom were eventually given the option to try the VR experience.

### Key findings from testing:

There was notable discussion on the type of VR experience to produce and the respective pros and cons of each type, especially for witness sensitisation. One of these points concerned the use of 3 Degrees of Freedom vs. 6 Degrees of Freedom technology, which as the name suggests speaks to the ability for the user to move within the virtual space and has implications on the hardware used.

3DoF	6DoF
User is fixed to a single spot but still sees a complete 360-degree experience	Allows a user to roam freely within a virtual environment
Can introduce an element of motion sickness for some users	Requires an amount of space (typically 3M x 2M) and the setup of a “guardian” boundary, which must be followed by the user
Controller is a single small unit with a minimum number of buttons and a very prominent “trigger”	Controllers work in pairs and have a myriad of buttons

Feedback with survivor groups on their preferred headset was inconclusive. Nevertheless, it was agreed that 3DoF would be easier for ICC staff to operate with users and, whilst 6DoF offers some theoretical advantages, the 3DoF option was ultimately chosen.

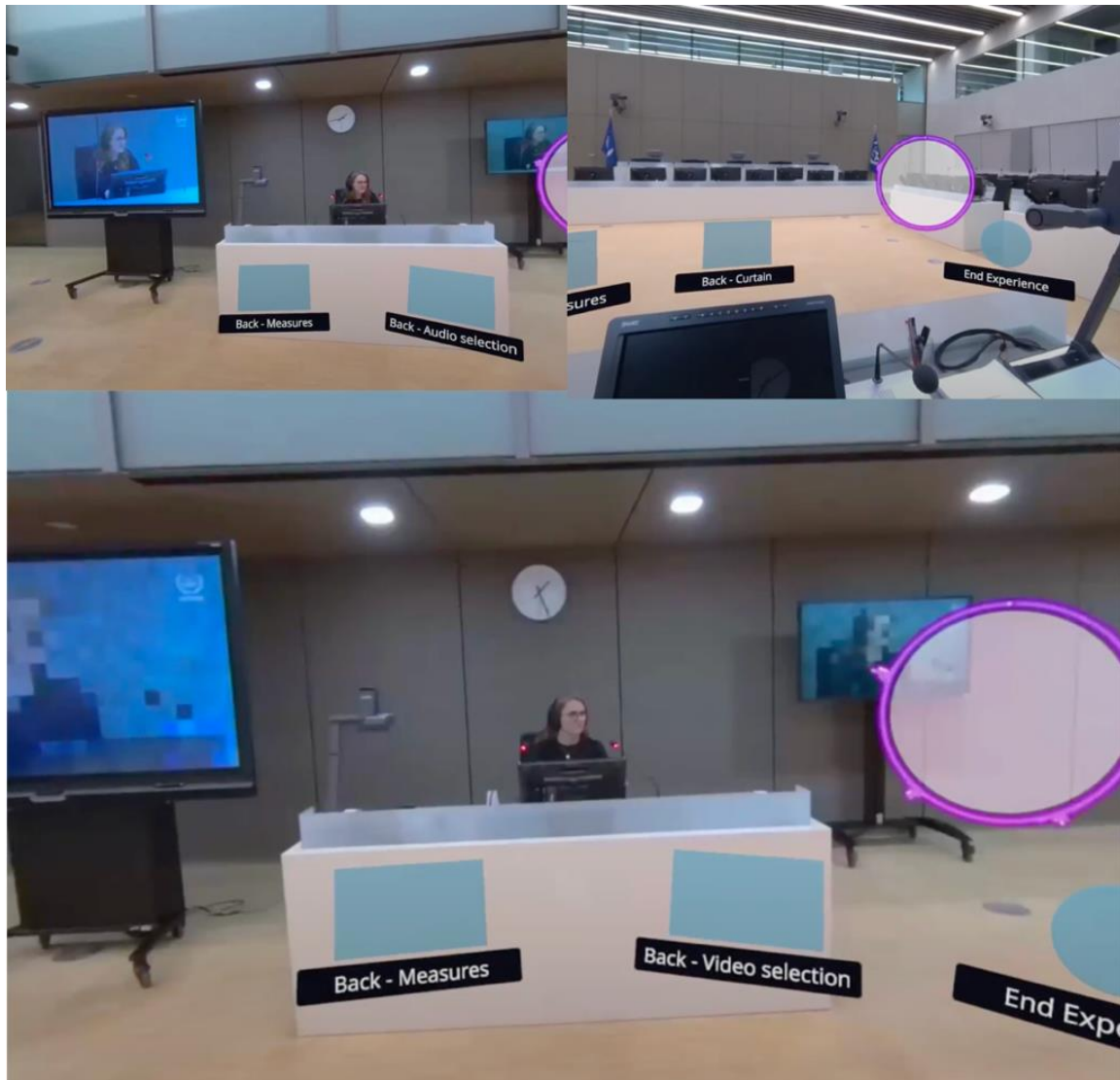
Later, when the prototype was tested with survivors (see Annex 3. for a summary), the feedback was overall very positive. People felt that the application gave the information needed about the measures and that the script was clear. There was a comment that it was a good tool to help people engage with the ICC and understand the court system. There were some comments about the script, user experience and the hardware, which centred on design features that were adjustable. These ideas included, for example, that the guide followed the user as they looked around, to provide spatial audio within the experience, and for spatial cues to help users navigate the experience more easily.

There were also questions raised on accessibility, including how to engage people with hearing and vision barriers, which can also be extended to motor and cognitive barriers. Ideas to support this included the use of subtitles. Finally, there was also concern about its use for people who could not fit the VR head strap on their head, for example those wearing a hijab, a scarf, a turban or certain hairstyles. It was noted that while it is possible to view the VR without the head strap, this was quite uncomfortable as the headset became heavy quite quickly.

With the second group, who took part in the A/B test (see Annex 4.), suggested design improvements echoed the survivors consultation and included further ideas for developing the VR experience. These included presenting the information that might be available to the witness on the screen in front of them in the courtroom, or showing the other rooms the witness might be present in before and after they give testimony within the ICC building as part of the experience.

Overall, people who heard the script had a slightly more accurate recall of the information than people who had used the VR application. This is a slight difference and could change with a larger testing size. It does appear that from both methods people did broadly understand the information provided and were able to

recall it. At the same time, reception of the VR tool both within and outside of this formal testing was strongly positive, with users highlighting the overall sense of immersion within the application. People who used the VR application appear to have gained something that people who were read the script did not, the feeling of being in the court. Therefore, whilst more work is needed beyond this initial testing to understand if and how the VR experience might help users understand the nuances of court special measures or of giving testimony. Evidence suggests that the tool could be used alongside existing activities undertaken by an investigator to provide a complementary perspective for a potential witness who is considering giving court testimony.



Picture 2: Stills from the prototype solution

# Conclusion

The pilot has shown that there are multiple potential ways for AR/VR technology to be used by international courts. Augmented and virtual reality technologies show promise in these contexts because the global nature of these courts require de-localised judgements and experiences that are removed from their initial context, where VR technology can act as a bridge.

For example, in the case of VR crime scene reconstruction, court members like judges could be supported in evaluating a case far from where a crime was committed. Equally, when it comes to sensitisation, witnesses will likely be far from home and lack a sense of familiarity with the courtroom process. That virtual reality technology shows promise for international courts is by no means a comment on its feasibility but an assessment that the work of international courts requires learning about or revisiting certain places or emotional states that one can be either exposed or sensitised to.

In this pilot, we have seen how virtual reality can be used to sensitise people to experiences that they may find unpleasant or triggering, and where consent must be given to take part in the real-life experience of giving courtroom testimony.

The pilot team maintained a commitment to exploring solution ideas that are focused on survivors of CRSV and their experience with the ICC. Whilst the pilot has come far in assessing the actual feasibility of some of these ideas, the next stage is to see how they might fit with ICC procedures and where the practicality of their use comes into play, especially when working with witnesses. One of the key learnings of the pilot is that some of these practicalities, like familiarity with the technology in some locations where the OTP investigates crimes, might make some ideas unsuitable. Overall, more data is needed on how potential witnesses might interact with these different technologies and, if other versions of an experience (e.g. tablet) might be preferred, what impact their immersive aspects will have.

During the pilot, a prototype solution was developed that focused on showing witnesses the special and protective measures that might be afforded to them during the court process. Producing a prototype was one of the key goals of the pilot, and making this has allowed the team to properly engage with different stakeholders and generate learnings specific to the ICC. Early indications appear to suggest that the tool can augment witnesses' experience by helping them understand what it might feel like to give testimony in court. If delivered appropriately, this tool could therefore be positive and complementary to existing engagement with witnesses and empower survivors of CRSV by helping them make more informed decisions.

Another learning from this pilot was that there are, and will continue to be, parallel developments in VR technology that actors like the ICC can capitalise on. For example, a VR solution for mindfulness or calming nerves can be important for witnesses as they are waiting to be called into the courtroom. This can be a standalone solution at relatively low cost to an international court and could significantly improve the experience of survivors in a way that doesn't require in-house or other development.

A key consideration for this work has always been the scale and sustainability of any solution. The pilot team were conscious of the difference between real impact and the use of a frontier technology that was gimmicky and unsustainable. It's clear that in this context, an irresponsible use of AR/VR technology would be a solution that required a large production budget and was not easily adaptable to different users who have specific needs. This desire to explore the sustainability of the technology was reflected in the choice of technical partner and software focused on the creation of "homemade" VR experiences.

At the same time, the pilot also identified a route to the ICC embedding this software in their internal processes and owning the creation of their own VR tools. Specific teams like the Forensic Division already produce 360 videos and images as part of efforts to visually reconstruct scenes for the courtroom, and interactions with members of the forensics team indicated a preference for solutions that are not produced by an external team at significant fees (which, as part of trial-based expenditure, is highly unlikely,) but to operate in a way where AR/VR technology is used to empower central teams to create their own experiences as and when they need to.



One of the core objectives of this pilot was to identify a sustainable scaling pathway for the technology and the most promising one appears to be where a VR company is not primarily concerned with production of experiences but rather in supplying and or licensing software to an international court. Something to be explored next is how VR technology can be used to present a variety different media, such as that collected during a trial process. This is different to VR technology being used as a siloed form of media itself (i.e. the creation of independent experience for a specific purpose). For the full potential of the technology to be realised, AR/VR must not be esoteric and therefore consigned to be used by external parties in a gimmicky, unsustainable way.

## Recommendations for further work

Having created a prototype solution, a potential next step is to continue building out the current prototype as a tool that may ultimately be used by the ICC. In addition, it would be useful to learn about what embedding VR tools within the institution might mean in practice. Additional work should therefore involve:

### Piloting the prototype

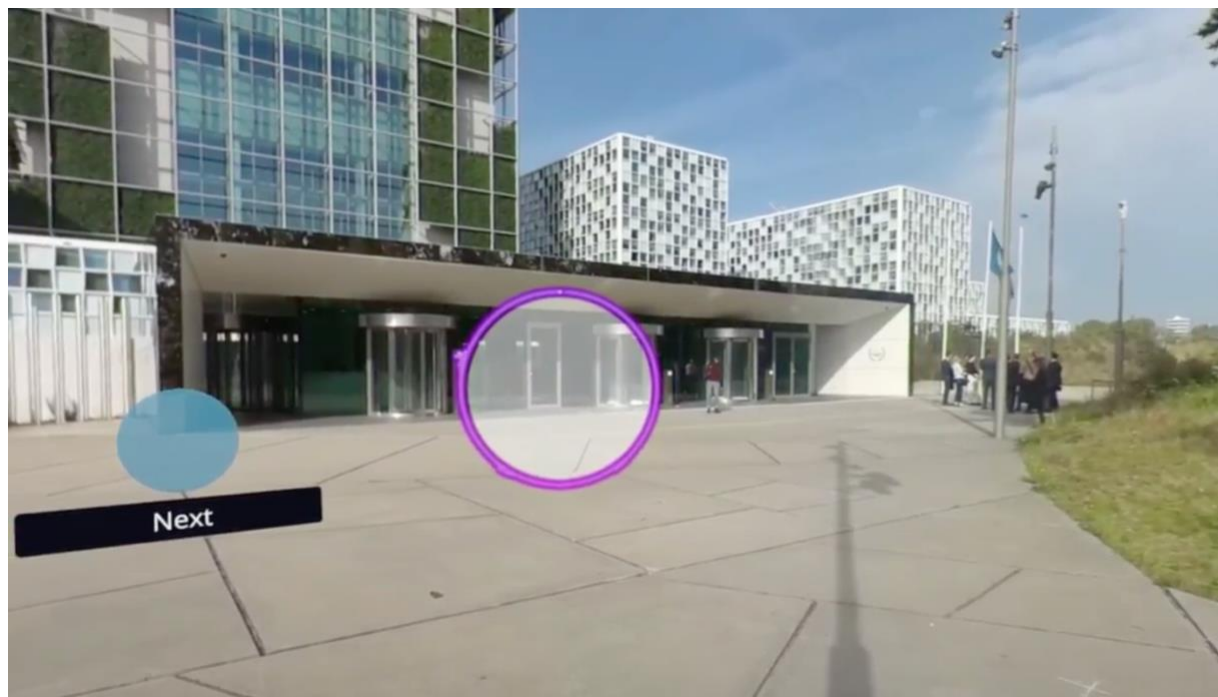
1. Test the impact of the prototype solution for survivors, including relative benefits to survivors compared to lower tech enhancements
2. Test operational aspects of deployment in situation countries to understand practical barriers to uptake e.g. connectivity, privacy and security.

### Scaling to new use cases

3. Test ICC capabilities to create / adapt their own experiences
4. Explore additional features e.g. recording a live court session for witnesses to experience as part of courtroom sensitisation

### Exploring additional ideas

5. See if AR/VR technologies can be used as an accessible, wider means to present media within the ICC (e.g. spatial representation of a crime scene during a court case)



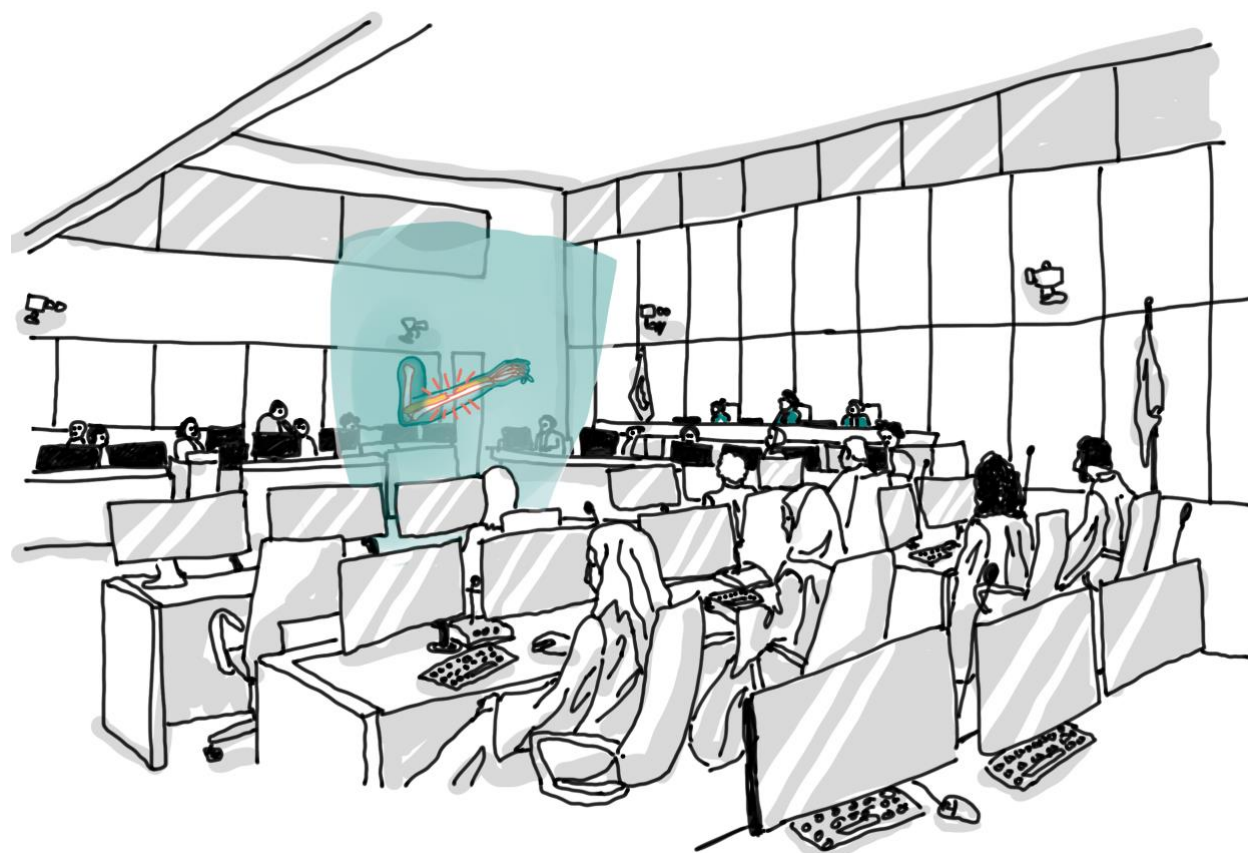
# Annex 1. Initial ideas produced on how AR/VR could be used in international courts

## Project Ideas

Below are the 11 ideas developed through research on how AR or VR can be used to help survivors of conflict related sexual violence through their journey with the court.

### AR to show the survivors injuries

During the sentencing and reparations stage of the court's proceedings, survivors' injuries could be shown in 3D using augmented reality visualisations. This would allow members of the Court to view both internal and external injuries, see them from different angles and zoom into details. This could reduce the need for the survivor to recount what happened to them, potentially reducing the re-traumatising effect of re-living their harms.



## AR witness representation/identity while testifying

In court, the witness's face is seen by the judges and the accused, but in the live stream of the proceedings to the public, their faces are obscured for protection. Instead of the blurring or pixelation currently used to obscure features, AR technologies could be employed. This could be an AR avatar on a screen or as a hologram, or a face filter which matches their facial expressions while hiding their identity. By using AR in this way, the public may find the witness more relatable.

In the future it could also be a way for witnesses to give evidence with them appearing as a hologram in the court, a new way for witnesses to give testimony remotely.



## A VR representation of a conflict community for the court

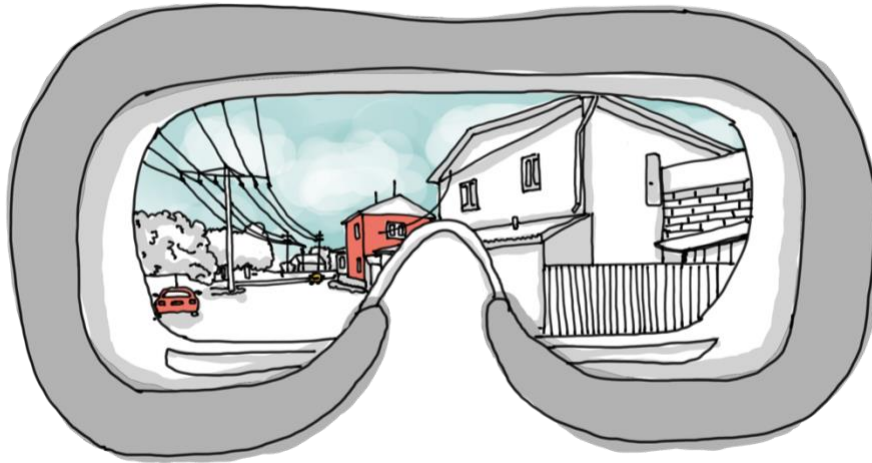
The judges and legal staff can't always go to the area where the conflict took place because it is too dangerous. VR could be a way for them to visit virtually to get a better understanding of the community, the environment and the society where the conflict happened.



## A VR representation of the conflict environment

VR could be used to visualise an area where a particular incident in a conflict happened. This could help the court understand the layout of the conflict site, lines of sight for the incident, or the distance between different locations.

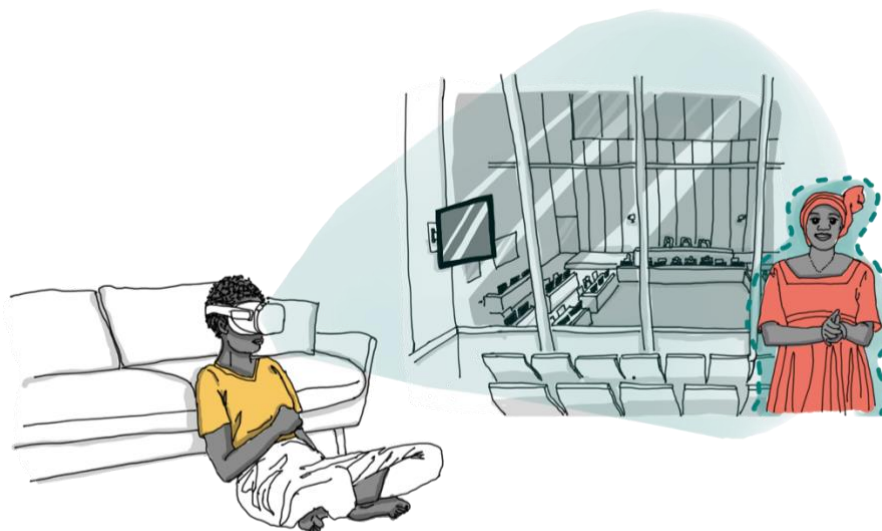
This could be an individual or shared experience, allowing for discussion inside VR. People could interact with the environment to pull up different details or move between maps and 3D representations of the area.



## VR for familiarisation

If survivors are appearing as witnesses in person in the court, VR could be used in a number of ways to help them feel more comfortable with the experience. By using a virtual court, survivors could familiarise themselves with the setting and the technology used in the court. Guided through the virtual environment by an avatar speaking their language, the survivor can spend as much time as they need in the virtual environment.

The familiarisation in VR could be extended to include the whole trip to The Hague, with survivors being given a virtual introduction to the city.



## VR for survivor and witness mental health

VR has been shown to work as a way to deliver mental health therapies, so the court could use VR to support survivors' and witnesses' mental health. VR could be used for trauma therapy in conjunction with a therapist, and could also be used to lower stress while at the court. Witnesses are often in a waiting room for long periods before testifying. During this time, VR could take them to a relaxing virtual world where interactions, audio and visuals are designed to help people stay calm.



## Court VR social platform

VR can be a social experience where people can meet and talk together. The court could create their own social VR platform used for outreach and support. The ICC could run events on the platform that explain their work to people around the world, who can ask questions and have real time interactions with the ICC. It could be a space where people can view the trial together, with the ICC answering any questions.

It could be a mediated space for survivors to meet and talk together, and could be survivors from the same or different conflicts. It could be a private space where witnesses at the court could talk to family members back home. Social VR has the potential to bring people together to support and inform before, during and after the trial proceedings.

## VR for outreach and external education

VR could be used for outreach and education, showing people the work that the ICC does, the countries it works with, and the court's processes. This could be used for outreach in different communities in the conflict country to show what the ICC can do. It could also be used within the ICC's visitor area to provide context of certain communities.



## Interactive courtroom proceedings

People in the countries affected by the conflict may not be able to travel to The Hague to see the hearings in person. While there is currently live access to the hearings on video streaming platforms the use of AR or VR could make the hearings more interactive and increase outreach to the affected communities.

The hearings could be filmed in 360-degrees and viewed in a VR headset, which could help people feel more involved. AR could display information and make the proceedings interactive. An AR avatar from the court would allow for live interactions between the court and the audience, which could facilitate discussion between the online community.

## VR for staff training

VR could be used for staff training at the court to give staff a better understanding of the needs of the survivors of conflict related sexual violence. VR has been used for sensitivity, inclusion and diversity training in the health sector and introducing it at the ICC could help survivors feel more supported in the process.

## VR Crime scene reconstructions

Some of the crime scenes from the conflict could be reconstructed in VR. This idea is similar to a VR representation of the conflict environment, but would be more detailed. This is not a VR reconstruction of the crime itself, but a detail reconstruction of the scene, which could help people understand the timeline of specific events.

## Annex 2. Additional use cases identified that fit within sensitisation

Following the agreed upon focus of the solution as courtroom sensitisation, discussions with the ICC Office of the Prosecutor led to more detailed understanding of where a VR tool could be used. These were:

- A child-friendly introduction to the Court to be used by Investigators: Investigators can explain the concept of "Court"/"ICC" etc in a more inter-active and engaging manner
- A tool to support discussions regarding possibility of testimony used by Investigators and Trial lawyers: Prior to testimony, this tool would assist the investigators to explain to a witness what testifying would involve, by showing the inside the Court including courtrooms, judges, participants etc. (Note: this is closely related to the prototype tool created during the pilot.)
- OTP Witness preparation: Prior to an in-depth familiarisation by the Victims and Witnesses Section (VWS), OTP conducts its own witness preparation session. This routinely involves, as part of that process, an explanation of the roles of the parties, including Prosecution/Defence/Judges, and the witness. Including in cases where witness preparation is not allowed, OTP could therefore use a VR tool to discuss how it will work in the courtroom.

# Annex 3: Group 1 Evaluation Summary

Three members of survivor's groups evaluated the application. Overall, the feedback was very positive. People felt that on the whole the application did give the information needed about the measures and that the script was clear. There was a comment that it was a good tool to help people engage with the ICC and understand the court system. There were some comments about the script, the user experience and the hardware which are below.

## Script

### Clarity

Because a major fear for potential witnesses is who will see them and who they will see, there were comments that this could be made clearer in the script, particularly in the curtain sections it could be made clearer earlier that the accused can still see the person on a screen, and how close the accused is to them. It was also felt that explaining why the accused could still see them on screen could be helpful.

It was noted that the explanation of the people in the different views was helpful but there should be more information on state representatives, who they are and what they do in the court, this is section 1.1.5.6 Representative of states, 1.7.2.2.5 Representative of States 1.7.2.3.5 Representative of States.

It was felt it would be useful to explain the duration of the application so that people know how long they could be in the headset.

### Navigation

There are several sections where the voice instructions to navigate the sections do not match what's on screen. For example, the script says "When you are ready select one of the blue buttons to move to the section you would like to explore" but in the scene you need to click on the next button first to see the choices. This happens in sections:

Section 1.0 Adapt to Needs and Protect Wellbeing, Dignity and Privacy

Section 1.1.1 - Explain Curtain

Section 1.1.3 - Courtroom with curtain scene

Section 1.7.2.1 - Closed Session

Section 1.7.2.3 - Closed session Explanation

Section 1.7.2.2 - Open session Explanation

Section 1.7.2.1a - Audio Distortion

Section 1.7.2.2a - Facial distortion

### Script speed

There was a comment that the voice over was a bit slow which could cause people to lose focus, though they felt it was a good speed if English wasn't the persons first language.

## User Experience

### Audio Circle

All three people found the circle a bit confusing. There were comments that they thought it was clickable and a way to navigate the application, that it was too big, that it should be towards the bottom of the view,



and that it might be better as a single line rather than in a circle. There was also a view that it should move around with you, as it was stationary the person found it strange that the voice didn't stay at that position, and that there wasn't spatial audio.

### **Multiple Views**

There was a comment that while it was important to see multiple views in the curtain section as it is important to see how different people in the court see the witness this was not the case for the open/closed session. In the open/closed session it was just important to know that the public wouldn't see them, the other views were not necessary.

### **Scenes**

There was one concern about their placement in the scene, they felt too high and everything in the scene seemed too big. Being too high made them feel they were looking down, which made them feel like they were going to fall.

### **User focus**

One person was worried that the user would lose focus, particularly in the explanations before the measure were shown as they were looking at a static courtroom. They felt these sections would benefit from some kind of animation that engages them with the text.

### **User Interactions**

It was mentioned that a pause button for the audio would be useful.

## **Accessibility and Inclusivity**

We should be thinking of how to engage people with audio and vision barriers, this could also be extended to motor and cognitive barriers. The use of subtitles was mentioned.

There was also concern about its use for people who could not fit the VR head strap on their head, for example could people fit it if they were wearing a hijab, or a scarf, and that it doesn't fit if people have a turban or certain hairstyles. It was noted that while it is possible to view the VR without the head strap that this was quite uncomfortable as the headset became heavy quite quickly.

## **Hardware**

### **The Controller**

The controller didn't connect to the headset straight away, and when it did it wasn't always synchronous to where you were pointing it, for example to click on a button you weren't pointing directly at the button but had to use the controller at an angle. This mainly happened in the main Pico area, but a couple of times in the app. There may have been a fix for this in the Pico's options, but it wasn't found by the facilitator.

## **Session Review**

After the session there was a group review with the FCDO testing team. Below are the notes from the session.

The team talked about having visual aids to navigation alongside the voiceover and the text, this could help if people miss something when they are looking around. This could be symbols for example on the back button, and arrows on where something is to help people know where to look e.g. when looking at the curtain.

In the introduction it could be made clearer what people will see so they know what to expect in the application e.g. say that they will view an empty court.

The use of the circle should be reviewed, looking at its size, placement or whether it should be a line not a circle.

There were some notes from Jaye in her initial viewing of the application:

- The scenes felt too elevated
- In some of the scenes the different sections of the court were not clear which could be solved by having labels. I.e. if you were viewing the court from where the accused sat, it would be good to indicate with a label where the witness is located
- Regarding the 'closed court' - is there any way of highlighting (in green hashed lines for example) the section of the court that can see you (I.e. everyone in the court) and the section where you would not be seen (I.e. the viewing gallery) to explain quickly and clearly what this means?

## **Beyond the Pilot**

There could be a document produced alongside the application that gives indicators to the ICC on using the application, for example how they introduce the application to people using it, who should be with the person when they use it.

### **Child Centred Version**

It was felt by one person that if a child was viewing the application they could lose focus, and that it would need to be more interactive, potentially with animated elements.

### **Script Translations**

It would be good to have more of the journey, so starting from the outside of the court showing how they would enter the court building and where they would sit before testifying.

### **Script Translations**

If the script is translated, we would need to think about the dialect and how understandable it would be for most people. Arabic was given as an example, there are many different Arabic dialects, but most people would understand classic Arabic. There was also a comment that the script could be read a bit faster if it was in the person's language.

# Annex 4: Group 2 Evaluation Summary

Group 2 evaluation involved user testing with members of the public who didn't have specific knowledge of the ICC. The aim of the evaluation was to assess the effectiveness of using a VR app to give information to individuals about the protective measures at the ICC, in comparison to receiving the information through a spoken script.

Four people received the information through VR and four through a spoken script. They were sent a questionnaire 15 minutes after their evaluation session ended. Most people returned the questionnaire within 15 minutes, one person who had viewed the VR app returned it the next day. The same questions were sent to both groups, with additional questions about the experience of VR sent to people who had used the VR app. There were two types of questions: closed questions, which were multiple choice, and open questions where people were prompted to write about different scenes.

The people who were read the script were also shown photos of the court with areas pointed out to them. People who viewed the VR app could comment on the VR during the evaluation.

## Evaluation Summary

Overall, testers who heard the script had a slightly more accurate recall of the information than testers who had used the VR application, though this could change if more people were involved in the testing process.

People who used the VR application appear to have gained something that people who were read the script did not, the feeling of being in the court. In the responses to an open-ended question about what stood out from the overall experience, testers who had listened to the script generally provided fact-based responses. Conversely, testers who had used VR tended to describe their experience, emphasising feelings of immersion in the court environment and the firsthand feeling of being there.

It is worth bearing in mind that this was a small sample, but the results indicate that future versions of the application could include more details in the script, the use of visual prompts to direct people and give information, and a reduced number of scenes. There could be more details in the script about the court and measures with visual prompts linked to the voice over. Visual information might help people understand the measures better, particularly in the screen scene.

There were comments about the navigation, the use of the circle to show audio and the views from different areas of the court that were similar to the comments from people in evaluation group 1. These are areas that could be reviewed in future versions.

Below are details of responses for each section of the script.

## Open and Closed Court

There was one question related to the open and closed court scenes which was a multiple-choice question.

The results indicate that everyone understood that a closed session meant that the public cannot see or hear the witness. For the other options, it seems that people who read the script had a slightly better understanding of the measure than people who viewed the VR. The table below show the results of the question.

**Question.** Which of the following happens if a court session is closed:

	VR Yes	Script Yes	VR No	Script No	VR Don't Know	Script Don't Know
1. The public cannot see or hear the witness.	4	4	0	0	0	0
2. The accused person cannot see or hear the witness.	1	1	1	3	1	0
3. The judges cannot see or hear the witness.	0	0	2	4	1	0
4. The prosecution cannot see or hear the witness	0	0	1	4	2	0

There was one questionnaire from a person testing the VR that had no data for option 2 – 4.

## Curtain

There were three questions about the curtain, two questions were closed with three answer options. The third question was open asking people to describe the use of the curtain at the ICC.

There was an increase in correct responses to one of the closed questions from people who had heard the script. The descriptions on the purpose of the curtain were more accurate from people who had been read the script compared to having viewed the scene in VR.

People who viewed the scene in VR described the curtain as shielding the witness from the public and being a way to prevent everyone in the courtroom seeing the witness. One person from the group described it correctly.

In contrast 3 of the 4 people who had the script read to them understood the purpose of the curtain.

Below are the responses to the two closed questions.

**Q** When the curtain is used in the court the witness and the accused can't see each other directly, can the accused see the witness on a video screen?

VR Yes	Script Yes	VR No	Script No
2	2	2	2

**Q** When the curtain is used in the court, can the public see the witness on a video screen?

VR Yes	Script Yes	VR No	Script No	VR Don't Know	Script Don't Know
1	3	2	1	1	0

## Digital and Audio Distortion

There were two questions asked about digital and audio distortion, one open and one closed. The open question asked people to describe video and audio distortion in their own words and the closed question asked specifically who would see or hear the distortion.

Both groups seem to understand the measure when answering the open question, though people who heard the script were more likely to answer the closed question correctly. Below is a table showing the closed question responses.

**Q.** Which of the following happens if digital audio or video distortion is used to hide the witness's identity on the video feed:

	VR Yes	Script Yes	VR No	Script No	VR Don't Know	Script Don't Know
1. The witnesses face or voice is distorted on the video the public sees.	4	4	0	0	0	0
2. The witnesses face or voice is distorted on the video the accused person sees.	2	1	1	3	1	0
3. The witnesses face or voice is distorted on the video the judges see.	1	0	3	4	0	0
4. The witnesses face or voice is distorted on the video the prosecution sees.	1	1	2	3	1	0

## Screen on and off

There was one question about the screen which was open and asked people to describe in their own words what the witness could see on their screen in the court. The use of the screen seems to be unclear to both groups, with one person from each group answering don't know. The other responses showed that most people didn't fully understand what could be shown on the screen.

## Additional Questions

There were two additional open questions on the questionnaire, the first asked people what stood out most to them from the application or information given and the second to describe in their words the purpose of the application.

### **Q. What stood out to you the most in the application/information?**

There was a difference in the way this question was answered depending on whether people had viewed the app or heard the information verbally. People who tried the app talked about the experience, while people who heard the information talked about the process.

Some of the comments from people who had viewed the app were how immersed and realistic it felt. One person felt that the use of VR would help people understand how confronting it would be and how the measures could help. The comments felt experiential, people had experienced what it was like to be in the courtroom.

People who heard the information made comments about who decides what measures and the effectiveness of the measures in helping people feel secure. Compared to the responses from people who viewed the VR the comments felt more observational, more discursive than experience based.

### **Q. In your words, describe the purpose of this application/information**

Both groups understood the purpose of the application in their descriptions.

## **Other Comments**

People who used the VR could make verbal comments during and after the session. Also, there were comments from one person who first heard the information then viewed the app after completing the questionnaire. Below is a summary of the comments.

### **VR Experience**

The comments were very positive about being in the VR and the quality of the VR, with positive comments about the opening scenes.

### **Visual Information**

It was felt there could be more visual information to highlight parts of the court, people didn't always connect what was being said in the voice over to certain parts of the court.

One person found the talking circle unsettling.

### **Script**

There were areas where people felt there should be more information. These were in the descriptions of who is in the court as well as clarifications in areas including:

- Audio/Face distortion
  - Whether these go hand in hand
- Screen on/off
  - Who decides when the screen is turned on and off

### **Navigation**

Like group 1, this group found the navigation confusing as it did not match the voice over, and that the labelling of the buttons was difficult to understand.

There was also a comment on whether a few of the scenes could be joined together e.g. the open and closed session and the audio/face distortion.

There was also a mention of including a pause button.

### **Comparison of verbal delivery to app**

The person who heard the script then experienced the app liked the autonomy and agency the app gave them. They found it easier to understand (though this could be how it felt as the results of the questionnaire show this isn't necessarily the case) and liked that they could go at their own pace.

They felt that experiencing the curtain in VR was a very different experience to hearing about it, they felt physically protected.

It humanised the people in the room for them, particularly the judges, it helped them see them as people doing their job. They found that viewing the court from the judge's seat, viewing gallery and the accused seat most helpful. They did wonder if the witness was an appropriate representation of a witness (this could be an area that is adapted for different countries).

They were concerned that the experience of using VR could be intimidating, with people concentrating on the experience rather than the content.

They did find the navigation and terminology confusing, and wondered if there could be someone in the VR with them to help.

