Scenario Feedback Session „PEARL"

Date, Time: _____   Expert ID:_____

Questions:
- Do you think that this vision is practical, helpful, and feasible?
- Which additional features are you missing?
- Which other questions can such a system/application help to answer?

Sam: Understanding the engagement of visitors of different ages

Sam wants to understand the now-ending exhibition to optimize the layout of the upcoming one. He first **creates several lenses** around exhibits of interest to reduce the size of the data source. Following, he alters the sizes of auto-generated lenses to better fit his ROIs via **body gestures**. As Sam wants to first focus on interactive exhibits (e.g., gaming machines) instead of static/ viewing-only installations, he applies **Positive and Negative filters** on both categories, respectively.

Based on this, he wants to understand how long visitors of different age groups were engaged with exhibits. For that, he uses **superimposed 3D stacked bars** that plots stay durations vs. age groups (i.e., children, teenagers, and adults) for selected exhibits. Surprisingly, he finds that adults visited the gaming machine longer than children. Besides, the **2D heatmap** shows that this exhibit had the most bystanders, as lots of visitors stayed relatively far away. To further understand why this system was not so popular for children, Sam activates the **3D avatar view**. He can now identify that only a few children could reach the gaming machine and control it on their own, as others often had to tiptoe to increase the view level. Combined with the **3D trajectories** of the children, it becomes apparent that many children took several steps back. Moreover, looking closer at adults' movements as **3D avatars with trails** nearby the game machine, it seems that adults interacted with the machine and often pointed to it, seemingly explaining something. Thus, it becomes clear that accessibility is limited due to the height of children.

Taylor: Understanding the navigation of visitors in the exhibition room

Taylor wants to understand how navigation aids help visitors' movements in order to optimize navigation and path guidance. In the examined exhibition, an Introduction Board describes a suggested order for visiting the different exhibits in the room.

After **creating lenses** on exhibits of interest and the entrance, she activates **Flow View**, where she sees that a lot of visitors did not follow the proposed order. Thus, she suspects that the Introduction Board was not used as expected. Then, she creates a **filter to categorize** visitors who visited the Introduction Board in the very beginning vs. those who did not. The updated comparison **Flow View** verifies that these visitors who didn't visit the Introduction board in the first place chose an arbitrary order.

Further zooming in via **3D trajectories**, she finds some **trajectories** are smaller in height, which suggests that these might mainly consist of younger visitors. This is further confirmed by **a general dashboard** via the body-anchored menu. Moreover, a **superimposed heatmap for gaze** density shows that examined visitors were not as interested in the Introduction Board. Therefore, Taylor hypothesizes that the

Introduction Board was not as accessible to children. Future exhibits should create Introduction Boards considering, e.g., more child-friendly language, height, or other navigation aids such as floor indicators.