

### 3D Timeline User Study

Thank you for participating in our user study. During this study you will explore two different graphical user interfaces **multiview** and **timeline** that both support exploration of 3D modeling histories. Your task is to answer very simple quiz questions with regards to presented 3D models, assess the usability of the systems and at the end compare and contrast the two interfaces and the types of explorations you will have experienced. The experiment will last no more than 15 minutes and you can withdraw at any point in which case your answers will be **invalidated**.

**Q0. What is your 3D modeling experience? Please tick as appropriate.**

☐

Beginner

☒

Intermediate

☐

Expert

Please continue on the next page.

## Multiview User Interface

In the multiview user interface you are presented a sequence of 3D models ordered from the bottom right to the top left. You can navigate all models simultaneously and select and highlight individual meshes in each window independently.

You will now be given a sample dataset to familiarise yourself with the user interface. You can ask questions at any time.

Next you will be given a dataset on which to answer the following questions. The time it takes you to complete the task will be measured.

Dataset:

Medaervul

Q1. Between which two models were the most unique non-duplicate components added?

Stage-04-end  
Stage-05-end

Q2. How many components have the longest life span, i.e. appear in the most models?

1

Q3. Between which two models the most duplication happened?

Stage-03-end  
Stage-04-end

Duration:

2:21

Please continue on the next page.

## System Usability Scale

If you feel you cannot respond to a particular item, you should mark the centre point of the scale.

Interface:

Multiview

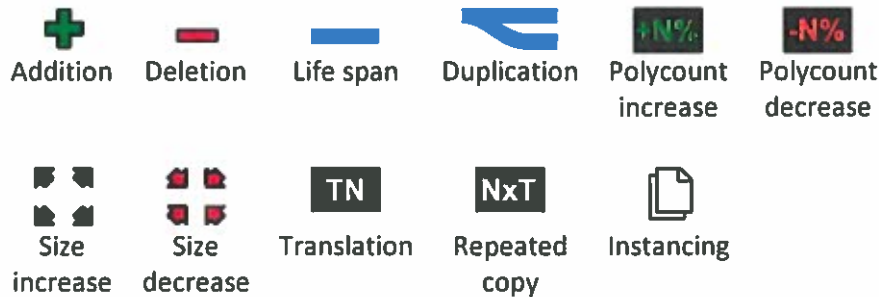
	Strongly disagree						Strongly agree
1. I think that I would like to use this system frequently.							
2. I found the system unnecessarily complex.							
3. I thought the system was easy to use.							
4. I think that I would need the support of a technical person to be able to use this system.							
5. I found the various functions in this system were well integrated.							
6. I thought there was too much inconsistency in this system.							
7. I would imagine that most people would learn to use this system very quickly.							
8. I found the system very cumbersome to use.							
9. I felt very confident using the system.							
10. I needed to learn a lot of things before I could get going with this system.							

Please continue on the next page.

## Timeline User Interface

In the timeline user interface you are presented a sequence of 3D models ordered from left to right. You can navigate all models simultaneously and select and highlight individual meshes in each window independently. In addition, you can move the slider to reveal the flow of editing operations in the main morphing window. Tool tips on each 3D view reveal the file name of each model.

Timeline legend:



You will now be given a sample dataset to familiarise yourself with the user interface. You can ask questions at any time.

Next you will be given a dataset on which to answer the following questions. The time it takes you to complete the task will be measured.

Dataset:

Brick

Q1. Between which two models were the most unique non-duplicate components added?

lego\_10-28  
lego\_16

Q2. How many components have the longest life span, i.e. appear in the most models?

1

Q3. Between which two models the most duplication happened?

lego-7  
lego-8

Duration:

1:53

Please continue on the next page.

## System Usability Scale

If you feel you cannot respond to a particular item, you should mark the centre point of the scale.

Interface:

Timeline

	Strongly disagree						Strongly agree
1. I think that I would like to use this system frequently.	1	2	3	4	5		
2. I found the system unnecessarily complex.	1	2	3	4	5		
3. I thought the system was easy to use.	1	2	3	4	5		
4. I think that I would need the support of a technical person to be able to use this system.	1	2	3	4	5		
5. I found the various functions in this system were well integrated.	1	2	3	4	5		
6. I thought there was too much inconsistency in this system.	1	2	3	4	5		
7. I would imagine that most people would learn to use this system very quickly.	1	2	3	4	5		
8. I found the system very cumbersome to use.	1	2	3	4	5		
9. I felt very confident using the system.	1	2	3	4	5		
10. I needed to learn a lot of things before I could get going with this system.	1	2	3	4	5		

Please continue on the next page.

## Open Ended Questions

Q1. How would you compare the two tools?

The first simply shows the data, while the second shows the changes in the data. This was vital for ~~some~~ answering the types of questions ~~she~~ asked here.

Q2. Which tool would you prefer and why?

The second - it showed an evolution over time rather than making me do the comparisons.

Q3. Any additional comments?

I would ~~I~~ imagine the second system being very useful for the 3D modelling & engineering community.

Thank you for your participation, the user study is now over.