Webinar 'Smart cities and digital twin technology: the case of Dublin' 14/03/2025 - Q&A

Question	Answer
Can you share the link to the digital twin if it's still available?	Evan's work is still in development phase and not available online, but other relevant examples are shared below- Docklands POC - https://www.youtube.com/watch?v=eCdehJ2VTAo DCU campus explorer - DCU Campus Explorer Dublin Fire Brigade - Dublin Fire Brigade Blazes a Trail for Digital Twins in Emergency Response | Bentley Blog | Infrastructure Engineering Software & Solutions Climate action unit - IES and Dublin City Council work together on whole-life carbon Digital Twin project to optimise renovation of social housing | IES | DiscoverIES Evan: What Mani says is correct. This work is not generally available. It was really developed for the city and we have not current plans to release it more generally.
What is the data source for the photogrammetry models you mentioned? (Docklands 4D Planning)	Docklands model originally is procured in 2018 and is a mix of level of details of buildings - 3D Hackathon ppt / 3D Data Model Resources for Dublin Docklands SDZ - Dataset - data.smartdublin.ie We are now updating the model through a company called RealSim which is using aerial photogrammetry sourced through Bluesky Ireland and then detailing all textures and rendering for the model
Why did you choose Unreal over other platforms, such as Unity, mainly for the workflow (Blueprints et cetera), cross-platformness or also other considerations, such as licensing?	Various reasons. As you point out, UE has preferable licensing terms for the use cases we anticipate. In addition, top-end render quality is generally better in UE than Unity (although we have in no way pushed the limits here). Developer pool was also a consideration. We also

	looked at Godot (and I remain very interested in it) although its feature-set remains wanting. In the final analysis, I could find no compelling reason to select something other than UE and I did have some softer reasons for choosing UE due the fact that I have considerably more experience with UE than Unity or Godot and this tipped the balance. I'm confident this could have been done in Unity and possibly in Godot.
Are all the buildings and roads in Dublin modeled in 3D or are they auto generated?	For Docklands, buildings and landscape are modelled in 3D. For whole city, we used Cesium for Unreal: Photorealistic 3D Tiles from Google Maps Platform – Cesium
The NTA (National Testing Agency) does an annual crude traffic monitoring survey in the form of the Canal Cordon Count, which is only a small snapshot during a 4-hour period, Is there a plan to have a Live Digital Twin? with live traffic data, including all current breakdowns, road works, traffic lights etc, with integration with private operators e-bike sharing, car sharing, buses and taxis etc	We have live ecocounter sensor data and canal cordon count included in activetraveldashboard.smartdublin.ie. But would like to expand this project as a pilot action for T4R EU project. We may look at some of these data you have pointed out based on their availability at our unit. Evan: We discussed this and opted to leave this out of scope for this PoC.
How much time is required to create 3D buildings depending on the LOD level? How much computational weight does 1 km² of city buildings have based on different LODs?	1. Time to create is clearly going to depend on many things. Accuracy required, shader quality, texture quality, availability to good architectural data (BIM) etc. One could rough in in-accurate blocking data in minutes per building. Having to take high quality facade images for textures will take considerably longer per building. I suppose the short answer is really that it depends on the requirements. 2. Then entire experience (game) consumes <3GB on disk when not being played and <6GB in RAM when being played. By a rough estimate, this includes $6km^2$ of docklands 3d model so, if that were the only data, (and this a reasonably approx.) then we are looking at about $1GB/km^2$. I consider this 3d model to have a range of quality/LODs as I indicated in the video.

What role does the entral CSW (metadata) for Ireland play which is already there because of INSPIRE? (I was surprised you seem to find data "on some website" and not using INSPIRE discovery service instead.)	I am unaware about it. Thanks for highlighting that. Do you have relevant links? Happy to connect. Evan: I was not directed toward INSPIRE by DCC (and only really took one piece of data from the Irish Water website) however, I have now just looked at INSPIRE for Irish data and am not finding much available to me at all and certainly nothing that seems relevant to the DT4E work as scoped. I'm interested to learn more, though, and I will be exploring INSPIRE further.
How are the city councilors (local representatives) involved in the development of the Urban Digital Twin. How are democratic values and democratic control embedded in this smart city project?	As I mentioned, we adopted a bottom-up approach for building our digital twin programme. When we started, there was no formal national level guidelines around it. However, with our newly launched digital transformation strategy 2025-2030, we look at a potential to connect with city councilors and engage with them through digital twins for data driven decision making. As part of T4R project, DCC is leading ethics inclusion and democratization framework with city of Brussels and would be utilizing it while building our two resilient pilot actions.
Transport & Traffic was not a target of this Digital Twin do you plan to do one in the future?	We might look at traffic use case in future. This is open option for us. Evan: I think this would be a very interesting area for future work.