THALES

“More than just a pretty picture”

The CIGINext initiative

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SISO Simulation Interoperability Standards Organization
“Simulation Interoperability & Reuse through Standards”

Agenda

- What is the Common Image Generator Interface (CIGI) ?
- Why CIGINext?
- Our end goal – begin with the end in mind
- How to get involved

What is CIGI ?

An interface providing a standard way for a host device to communicate with an Image Generator (IG).

CIGI Background and purpose

Background

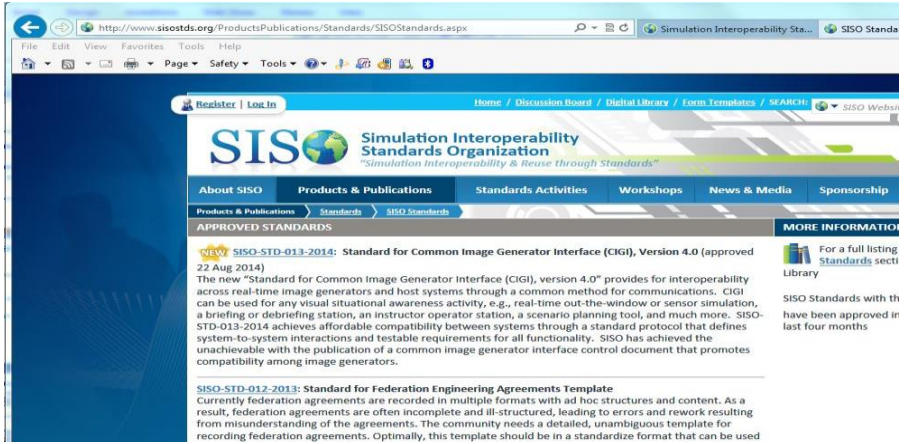
- Historically, most IGs have had a unique proprietary interface
- Changing an IG, for whatever purpose, is therefore costly (high integration costs)
- Issue made worse by the lack of an effective open common interface standard
- Whilst most IG's do share common controlling attributes, they do not share a common interface.

Purpose

- A **standardised interface** with the host so that **minimum modification** would be needed to switch IGs.
- Designed to assist suppliers and integrators of IG systems with **ease of integration**, code reuse, and **overall cost reduction**.
- An opportunity to **make switching IGs less risky** moving towards a 'plug and play' scenario

CIGI standard status

- CIGI 4.0 approved 22 Aug 14
- Freely available on the SISO website www.sisostds.org
- CIGI 4.0 first open version developed under SISO.
- Expected to evolve with time.

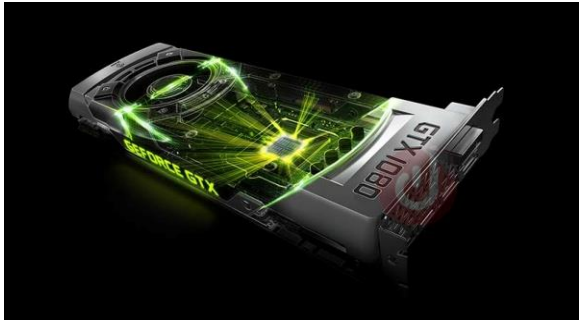


- A SISO Product Support Group (PSG) has been formed to maintain the standard and deal with any issues.
- The PSG is working on the next steps to the development of CIGI and welcomes participation from all - "CIGINext"

Why CIGINext?

From this…

To this…



More power (600*) , lower cost (1000*)

But our interfaces have not kept up

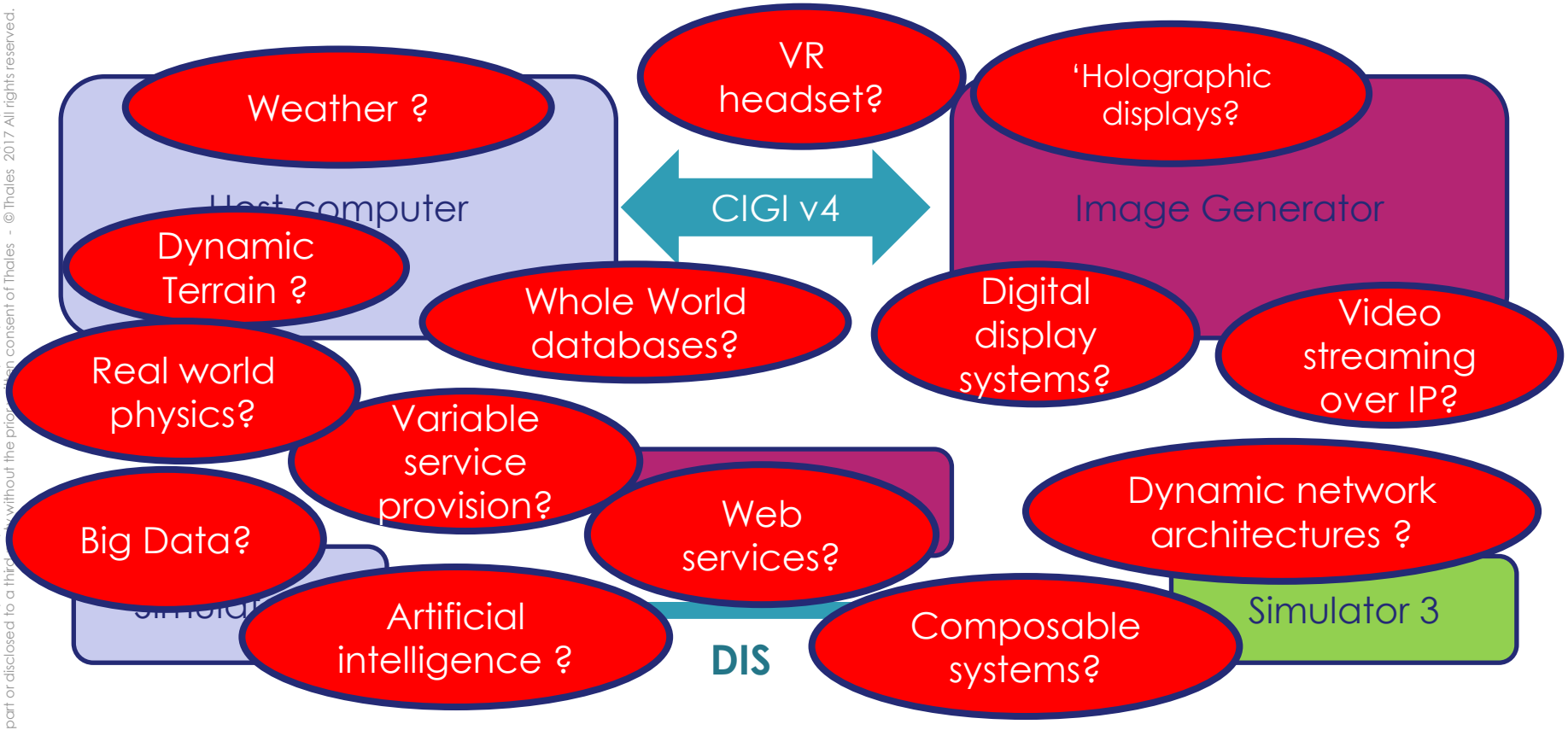
CIGI 4.0 uses old paradigm – a packet based interface

Reflects IG state of the art from 10 years ago

- Limited / no features for human characters
- No handling of dynamic terrain features
- Does not reflect features of 'COTS games technologies'

CIGI has reputation for being 'air focussed'

Older standards for older technologies



CIGINext group status

- Monthly Web / teleconference
- Discussing possible technical options
- Face to face workshop at SISO Simulation Interoperability Workshop Fall 2018
- Produce a planned way ahead before SIW Winter 2019
- All are welcome to join in and contribute – you do not have to be a SISO member to be involved
- Industry and government are represented
- Links from this work into NATO task groups MSaaS (MSG-164), and Dynamic Synthetic Environments (MSG-156)

Here comes the science bit – stay with me!

Next 4 slides indicate some initial thoughts from the group

Not finalised, and not to be taken as the definitive way forward

What do you think?

- Are there other options?
- Do you violently disagree with some or all of the options presented ?
- Have you already solved the problem?

GOOD – we want you to join the group!

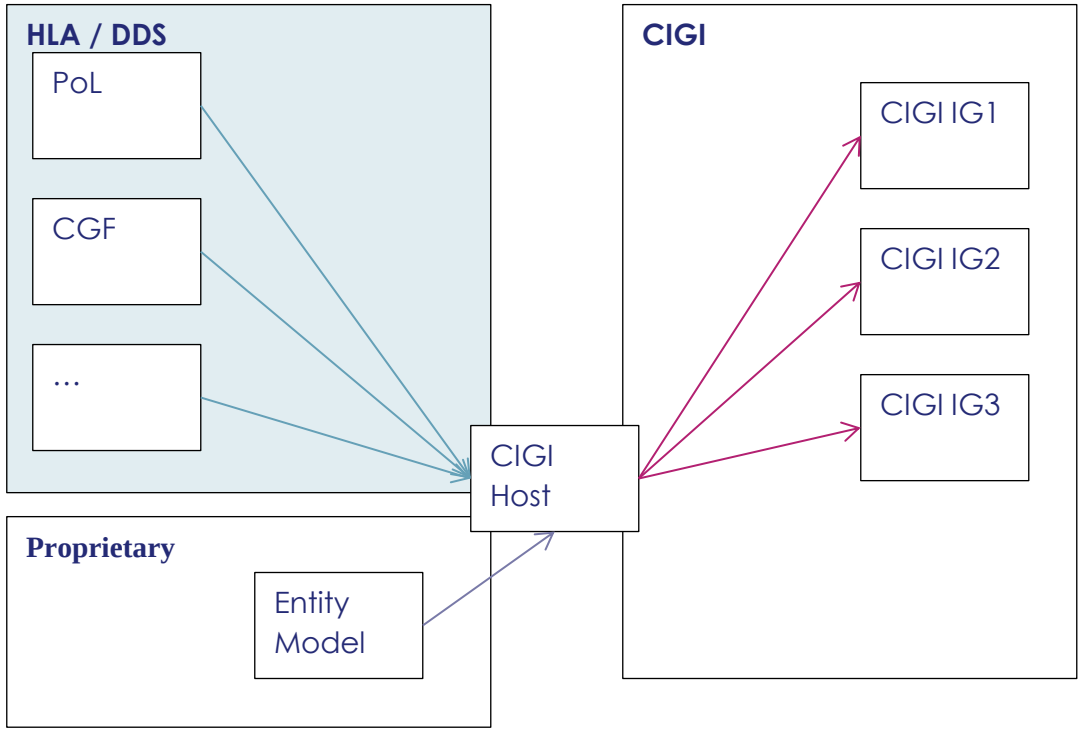
Option 1 – CIGI Classic

Pros

- Simpler IG implementation, only one interface to worry about
- Manageable network bandwidth as cigi host acts as network booster for IG's
- Low network impact on HLA / DDS publishers
- Enrichment of HLA / DDS entities / events can be managed by the CIGI host

Cons

- Complex host implementation, may have to deal with 3 different communications interfaces and time synchronisation / extrapolation of entity data



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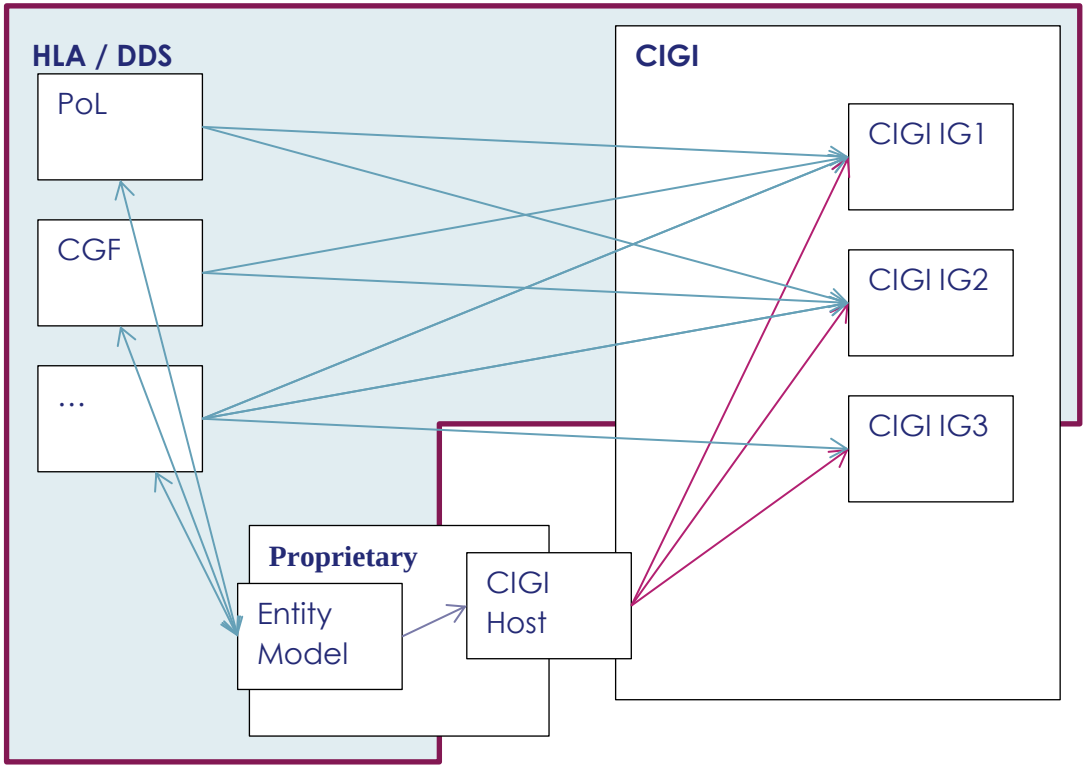
Option 2 - Direct HLA / DDS Network Connection

Pros

- Simple host implementation, only need to implement own ship specific features
- CIGI can focus on own entity features, camera / device control

Cons

- More complex IG implementation
- CIGINext would require adapting standardised FOM / topics
- Increased load on HLA / DDS might require boosters



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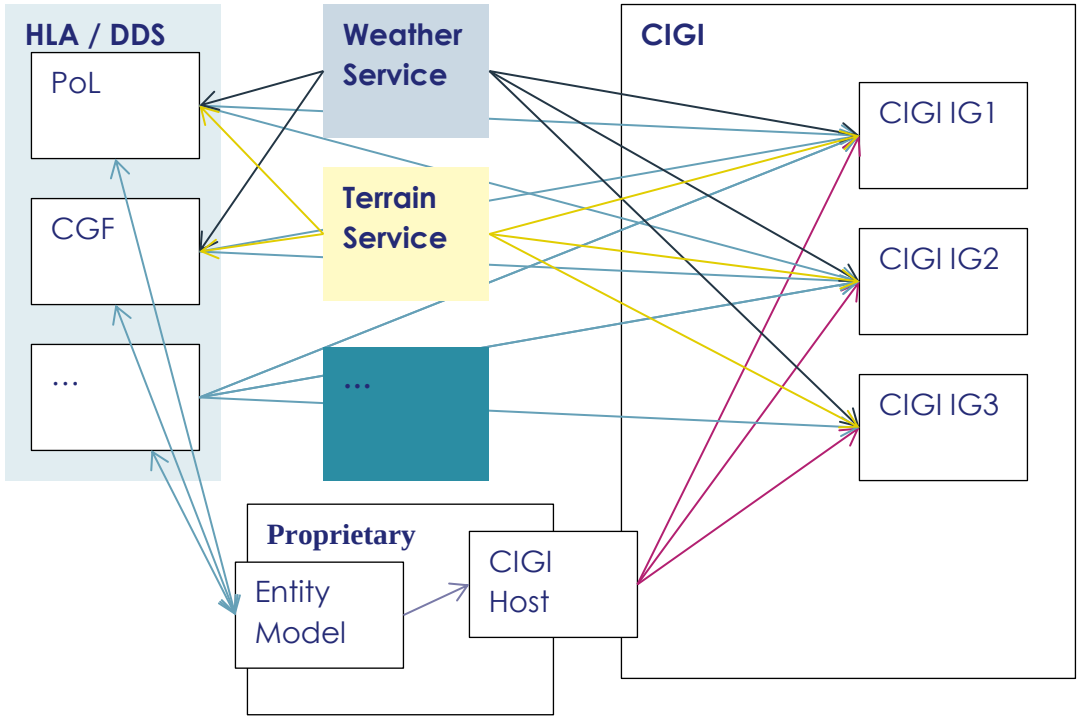
Option 3 - Common Environment Service Approach

Pros

- Correlation of terrain / weather provided by common services

Cons

- IG implementation much more complex
- Potentially more difficult to optimise terrain / environment for IG use



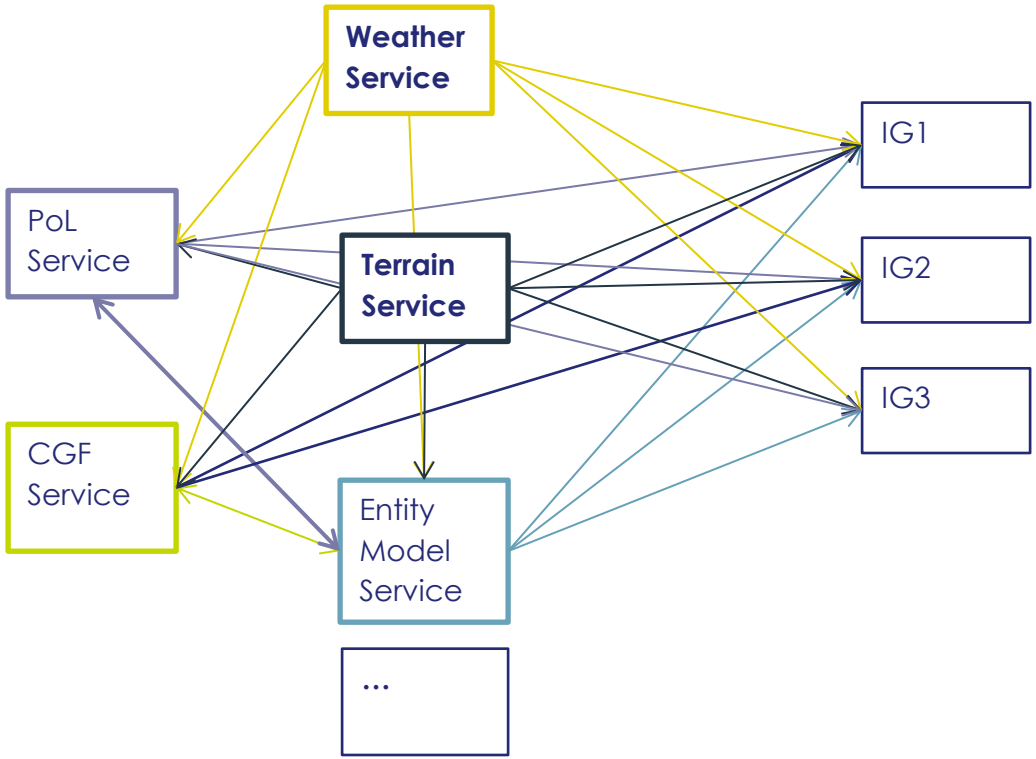
Option 4 - Service Oriented Architecture Approach

Pros

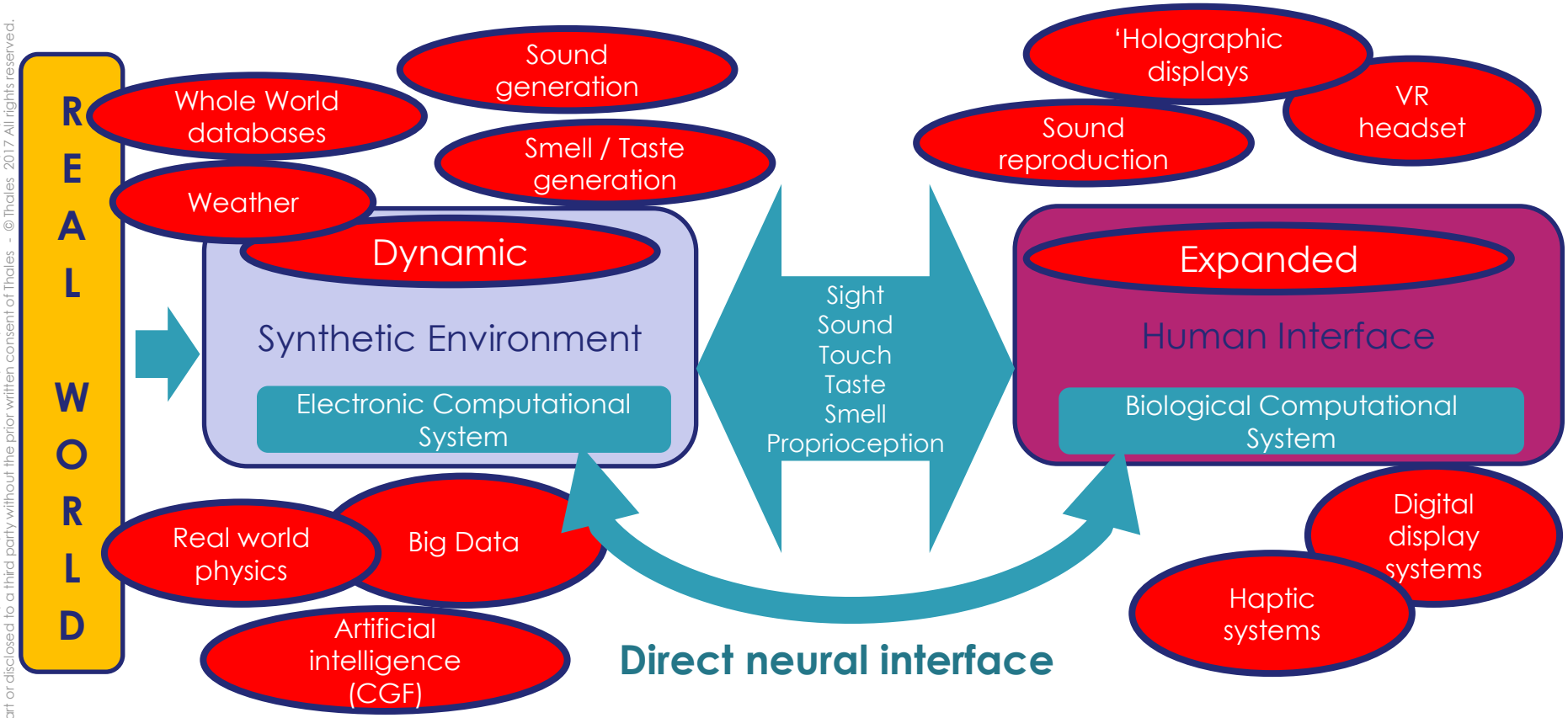
- Modular architecture, easier to replace components that adhere to standard service interface

Cons

- Complex IG implementation, many different networks and providers to deal with
- Could be difficult to get coherence between IG's
- Complex network architecture
- Complex bandwidth management
- How to work with vendor specific IG features?



Our end goal - Future Synthetic Environment as a Service (SEaaS)



Summary

CIGI4.0 is the only official version of CIGI that is approved by SISO, NATO, UK MOD, DoD Assist program

CIGINext group open to new ideas and people

- Get involved with monthly web/telecons

Aiming for the next version of CIGI taking into account

- New technologies and user needs
- Developments like pervasive VR / xR
- New requirements
- Modelling and Simulation as a Service (MSaaS)

Looking to the future

- To ensure new standards align with technology developments

For more information contact:

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