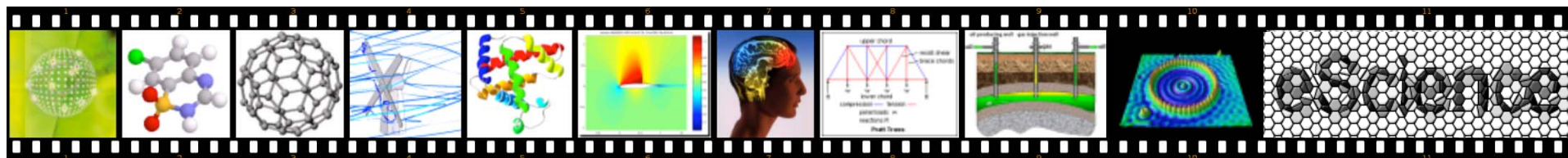
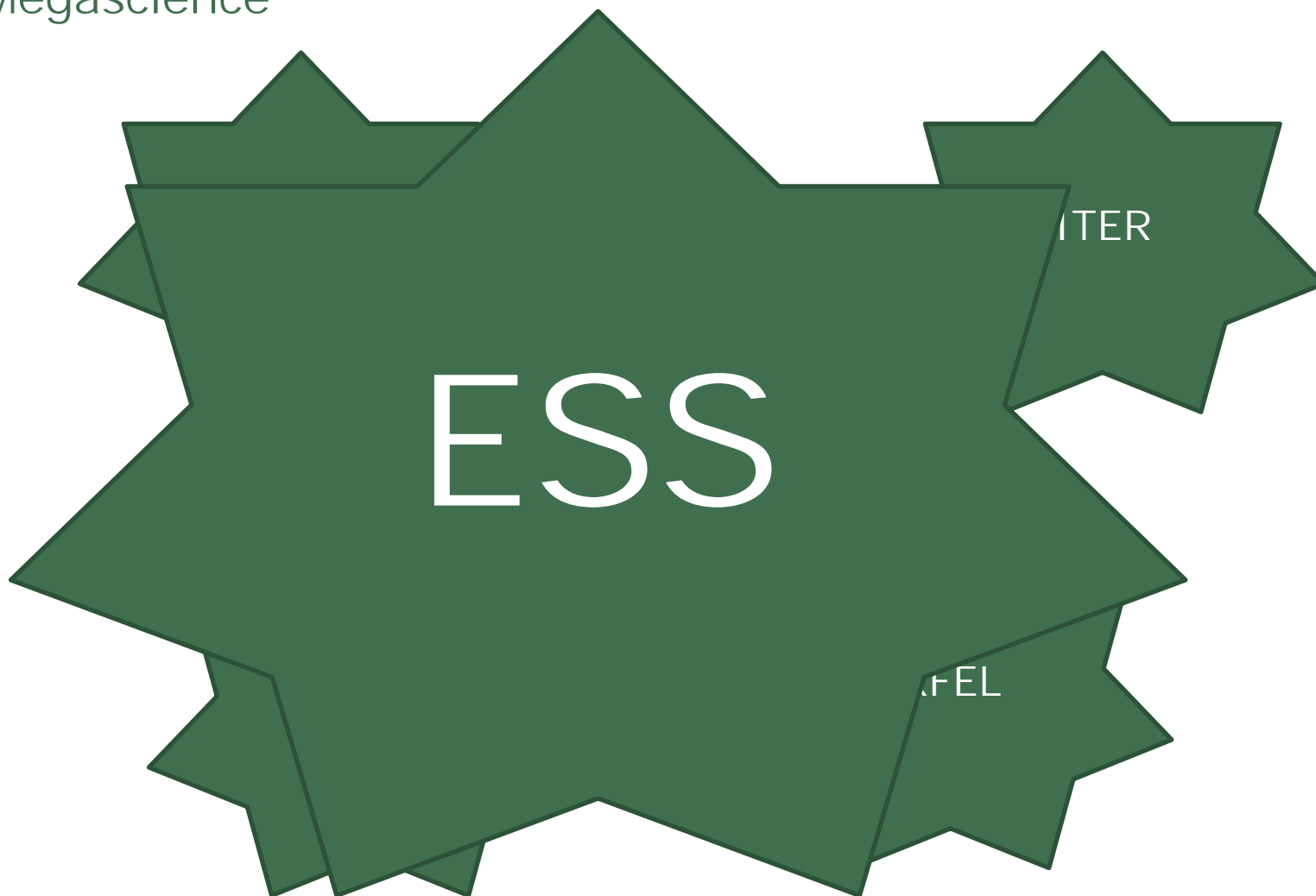




Data Management, Computing and Software Centre

Professor Brian Vinter
eScience Centre
University of Copenhagen

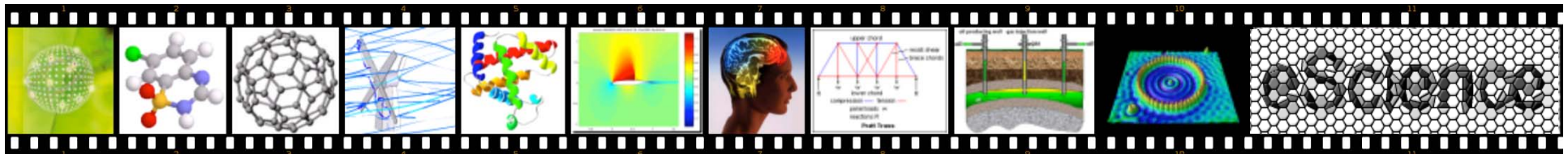
Megascience



DMS Pledge

The DMS should provide a facility for data-management for ESS that

- ❑ Provides seamless global access to the software and data that the DMS provides
- ❑ Ensure sufficient storage and computing power to allow users of ESS to plan, perform and analyze their experiments
- ❑ Provide world-class data archiving
- ❑ Guarantee integrity and secrecy of the data it manages
- ❑ Ensure compatibility of future technology



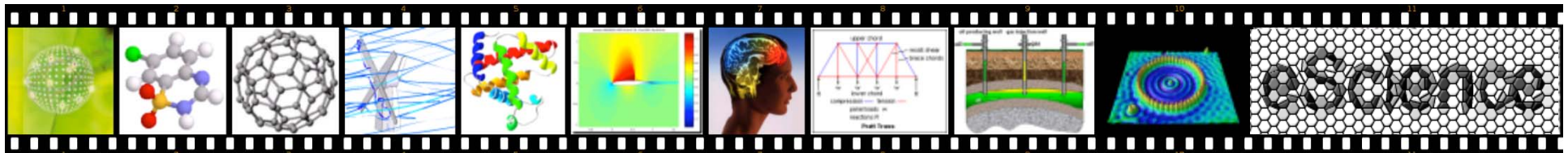
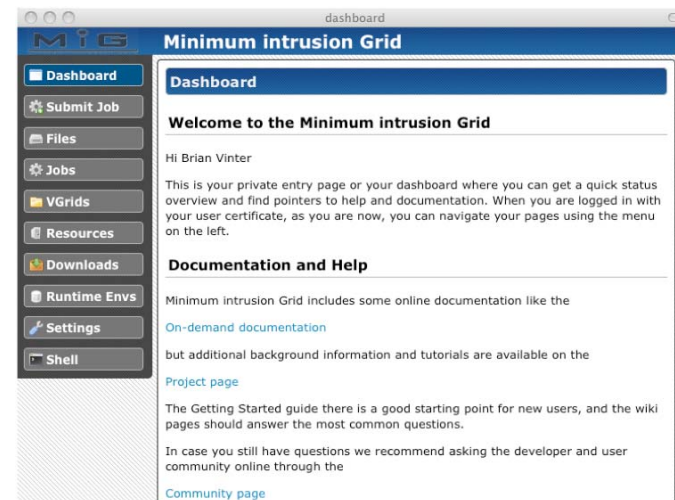
Global access

The users must be able to work from home

- But are welcome to sit with ESS

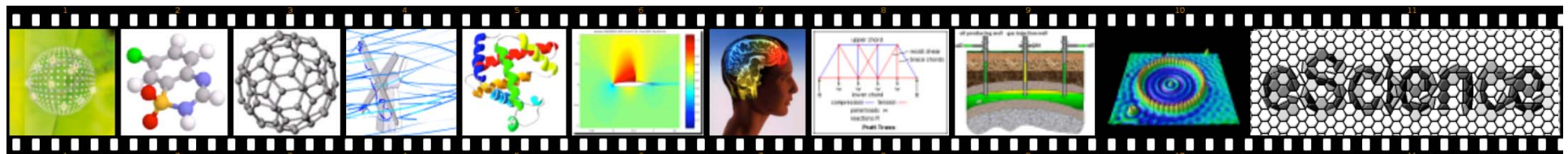
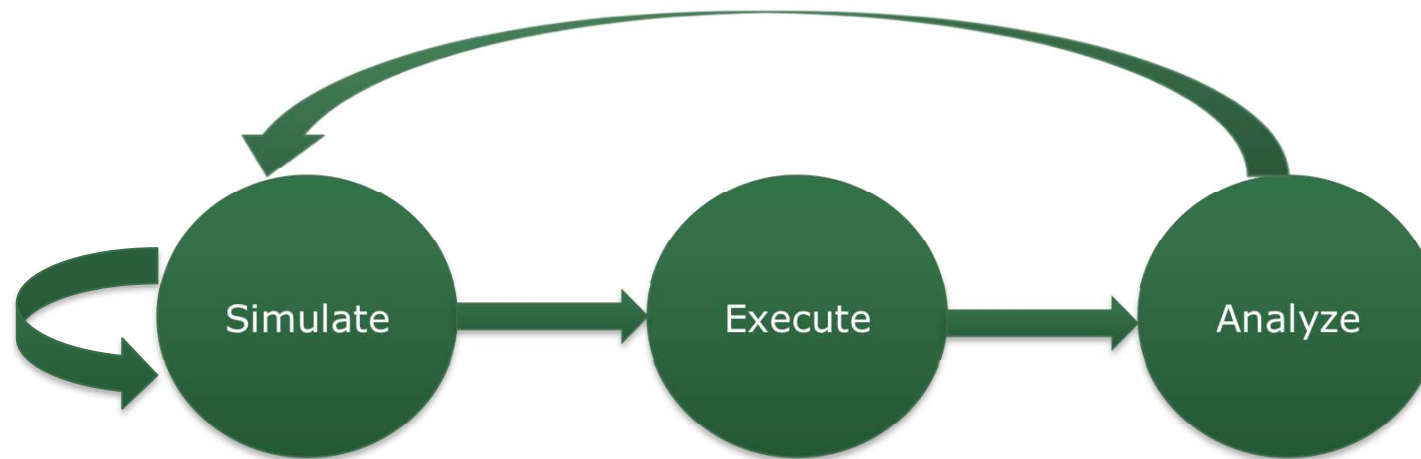
The user base is going to be broad

- That means different expectations to a compute centre



User workflow

Simulate experiments
Acquire data from experiments
Perform data analyses



Data archiving

The DMS should guarantee the data from the experiments in a foreseeable future

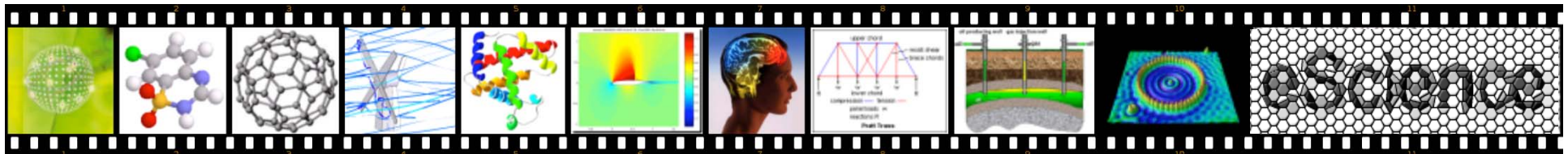
- Infinitely might make sense

For this to make sense a lot of meta-data that describe the scenario of the experiment should be logged

- Better to log too much than too little

We still don't have a firm idea of the size of these data

- But 10's of Petabytes per year seems to stress the imagination for now



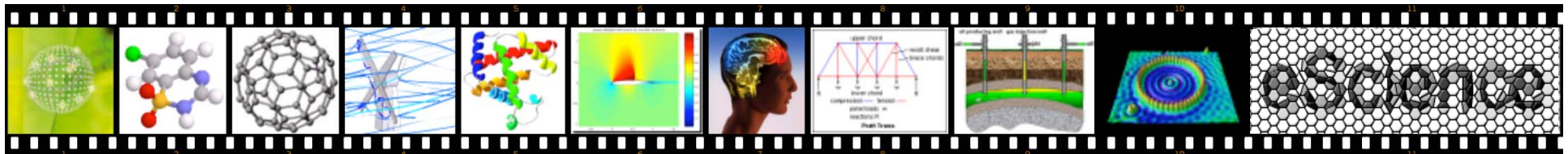
Integrity and secrecy

The DMS must obviously guarantee the integrity of the experiment data

- We still don't know the media for storage but otherwise well tested solutions exists already

Commercial users will require secrecy

- This is a new problem to many scientists
- Ensuring secrecy is actually easy
- The challenge becomes balancing secrecy with easy of use



Looking to the future

"Predictions are hard – especially about the future"

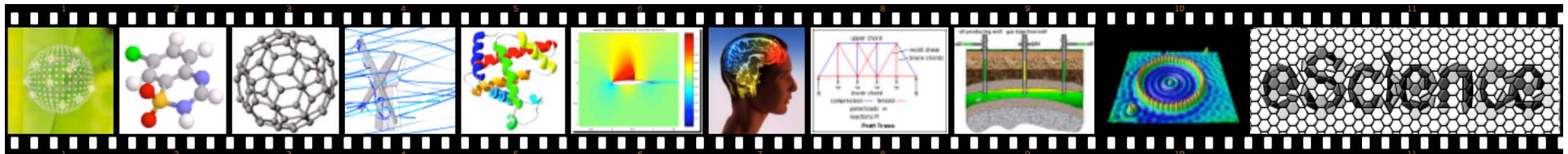
What is a computer going to look like in 10 years?

How is data storage going to work?

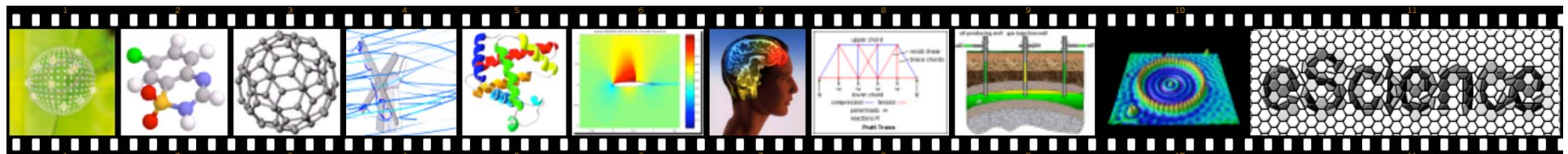
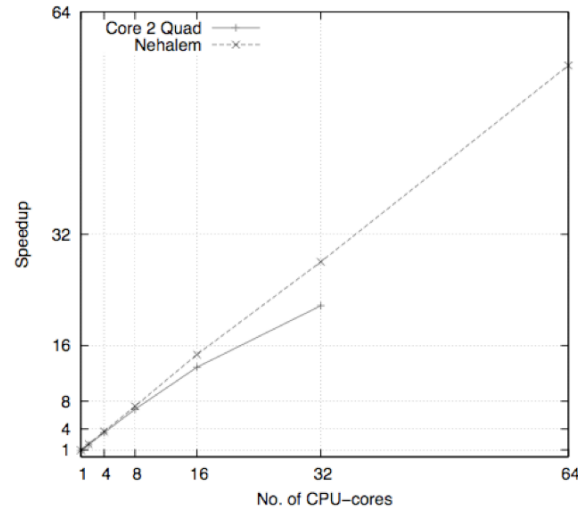
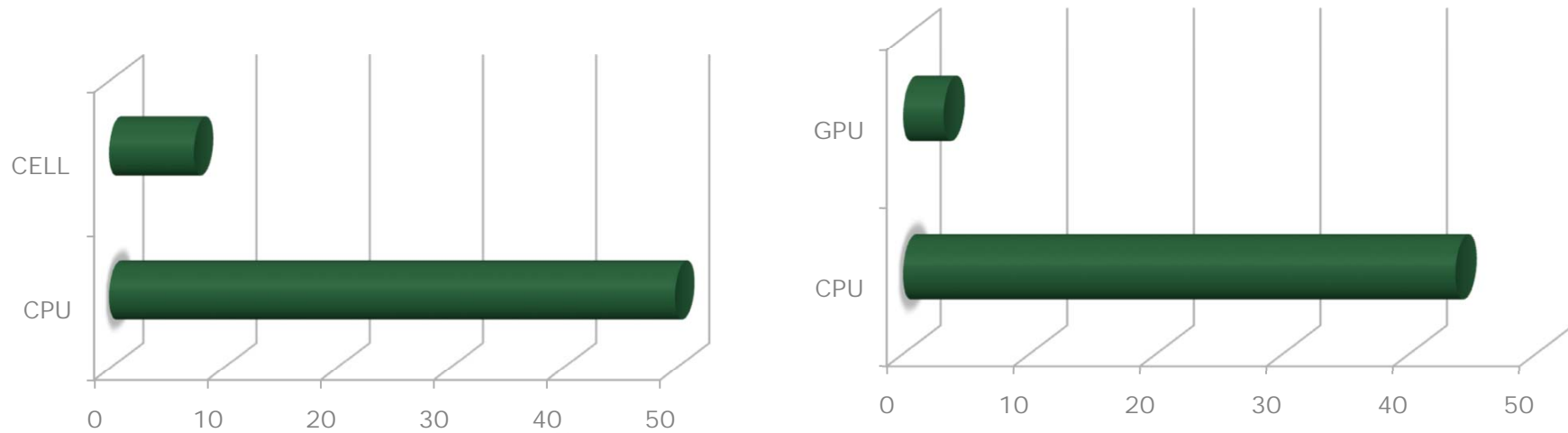
Will data analyses be the same a decade from now?

- And how should analyses tools look for the new user community?

Is all data visualization going to be 3D?



Preparing for the future



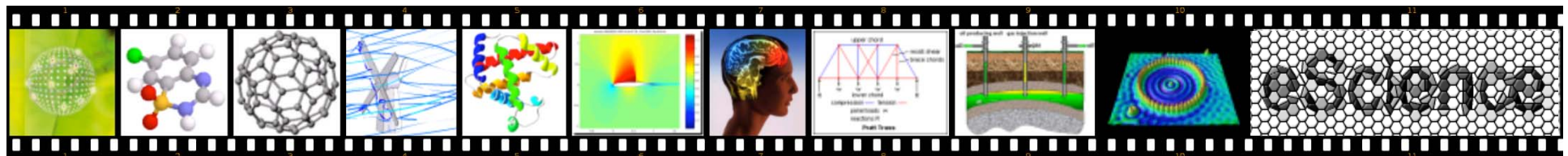
But first we need to design the machine

Right now the machine must be designed

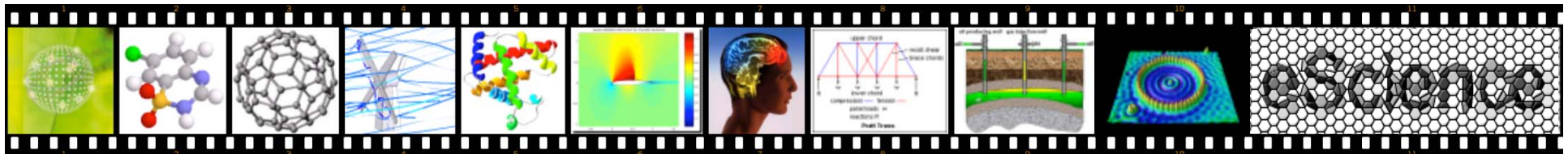
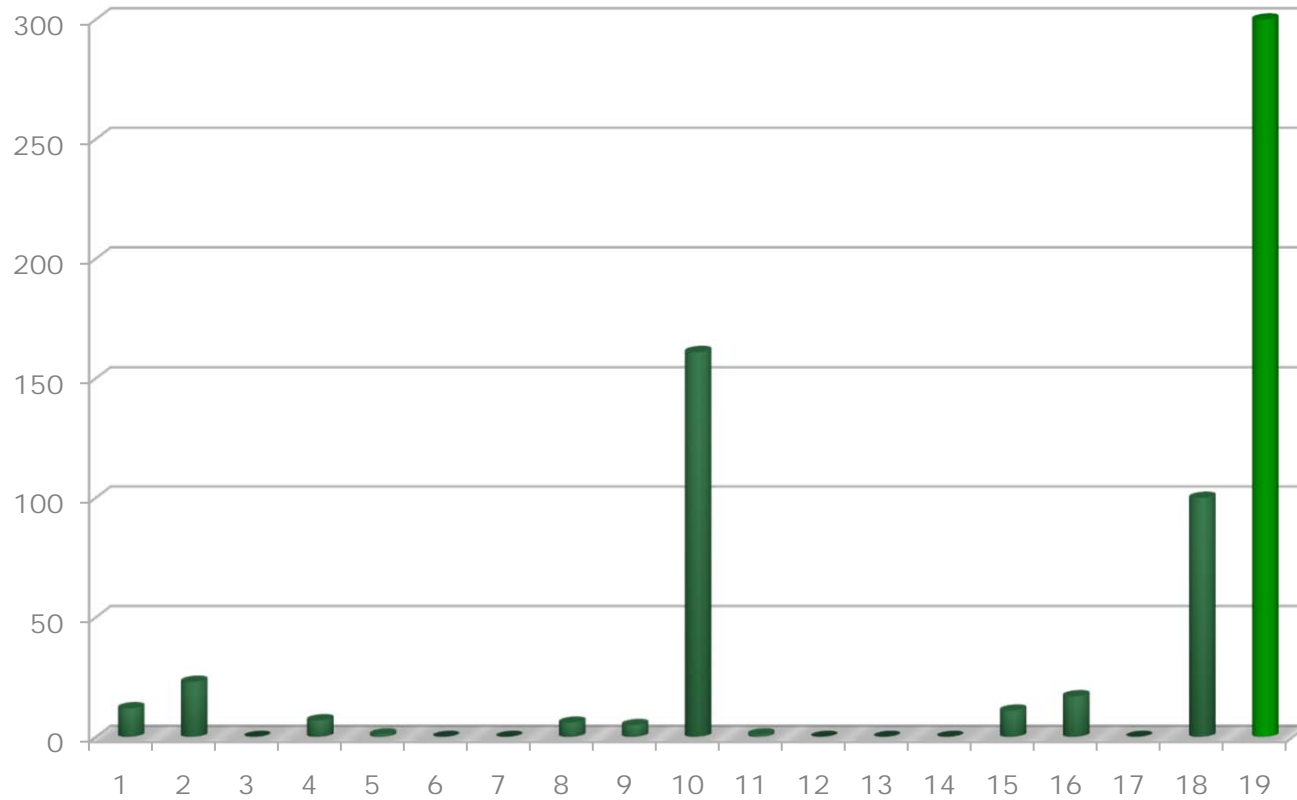
Fortunately that is not dissimilar to simulations for experiments

This gives the DMS a graduate startup

With a very skilled user base



Work is ongoing



This talk raises more questions than is answered I know...

QUESTIONS...

