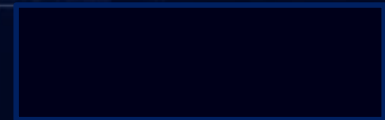


# Parallel Worlds: Connecting the Micro and Macro

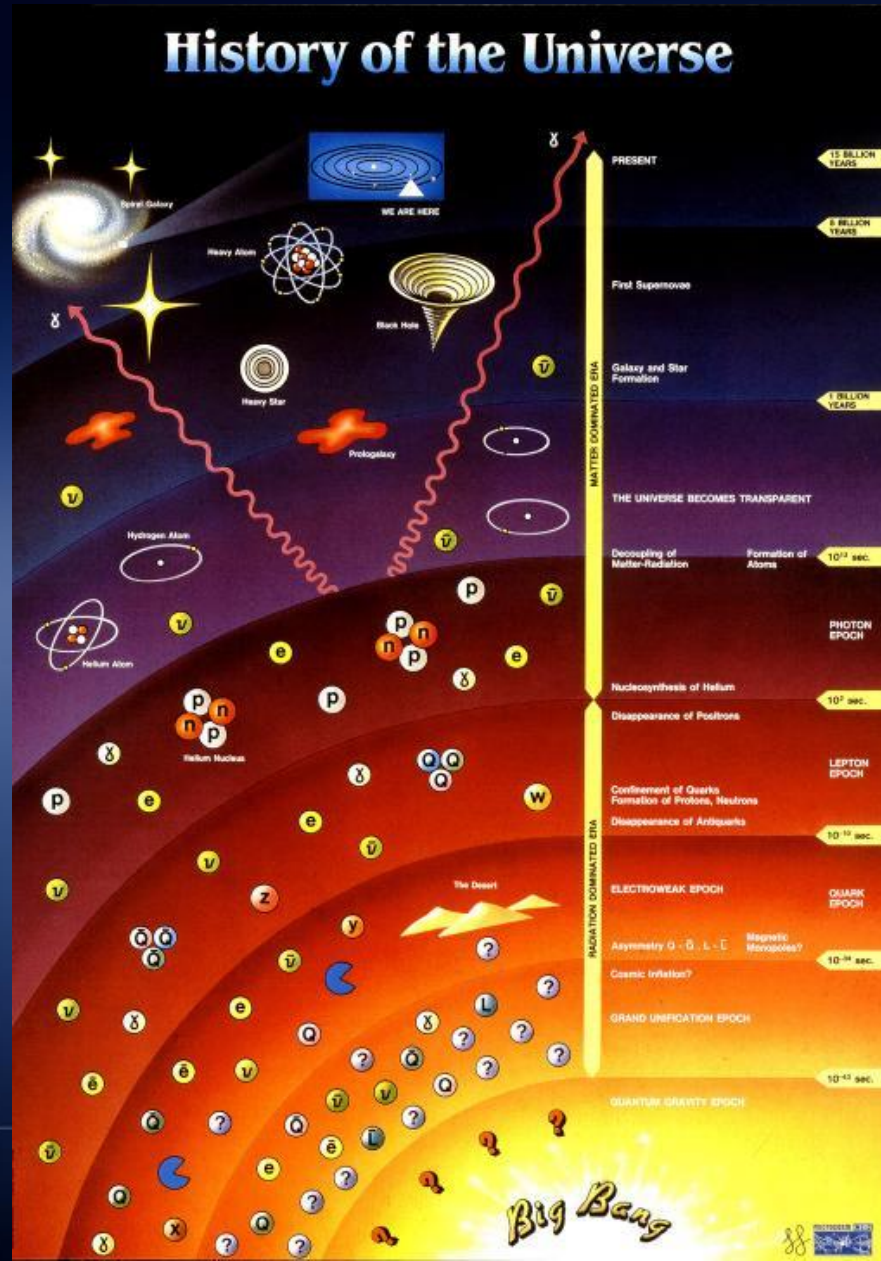
**About CERN, Physics, and Innovation**

CBI A3, November 28, 2018

Markus Nordberg (CERN)

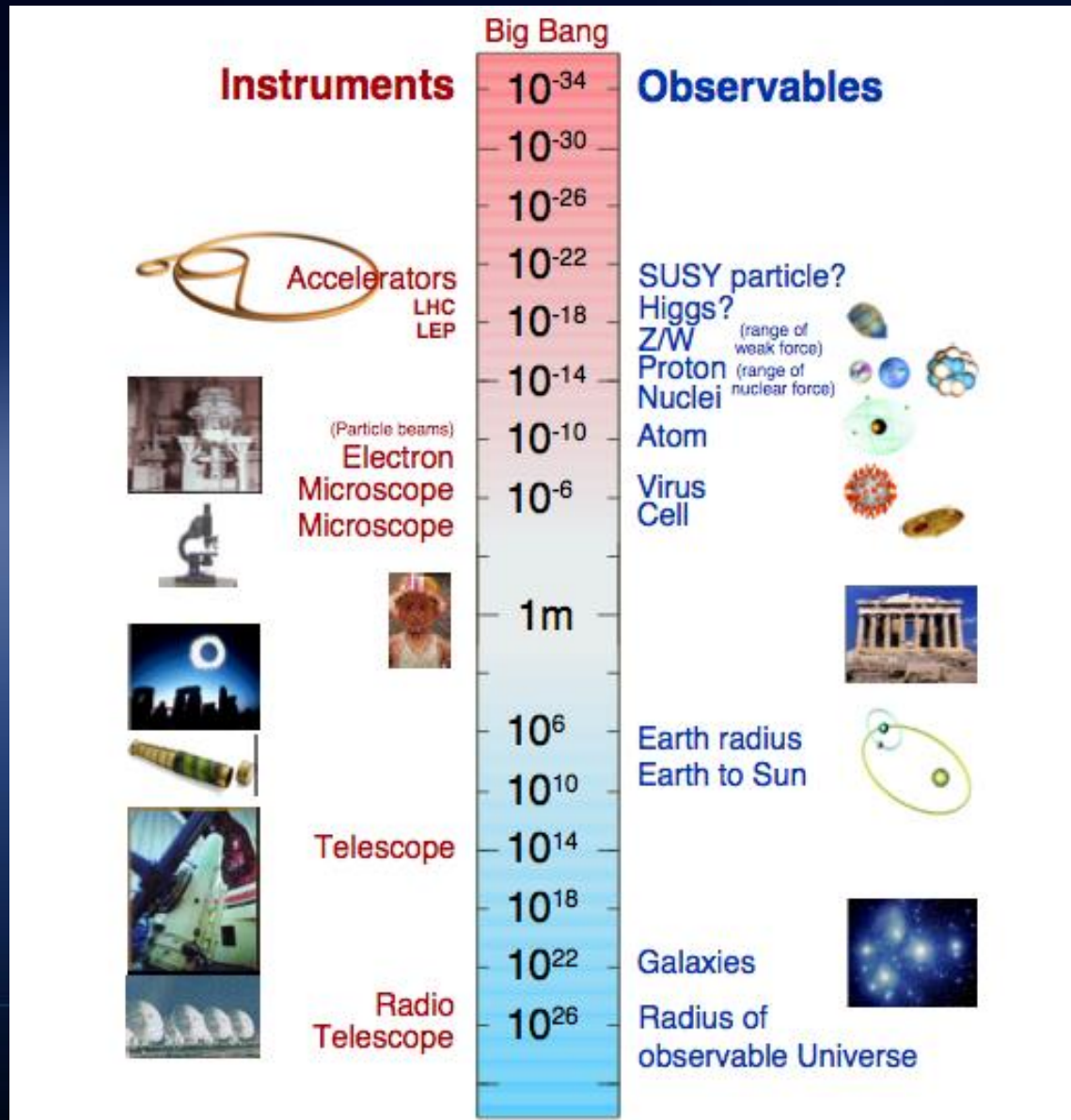


# How does CERN Connect?

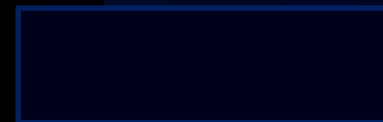
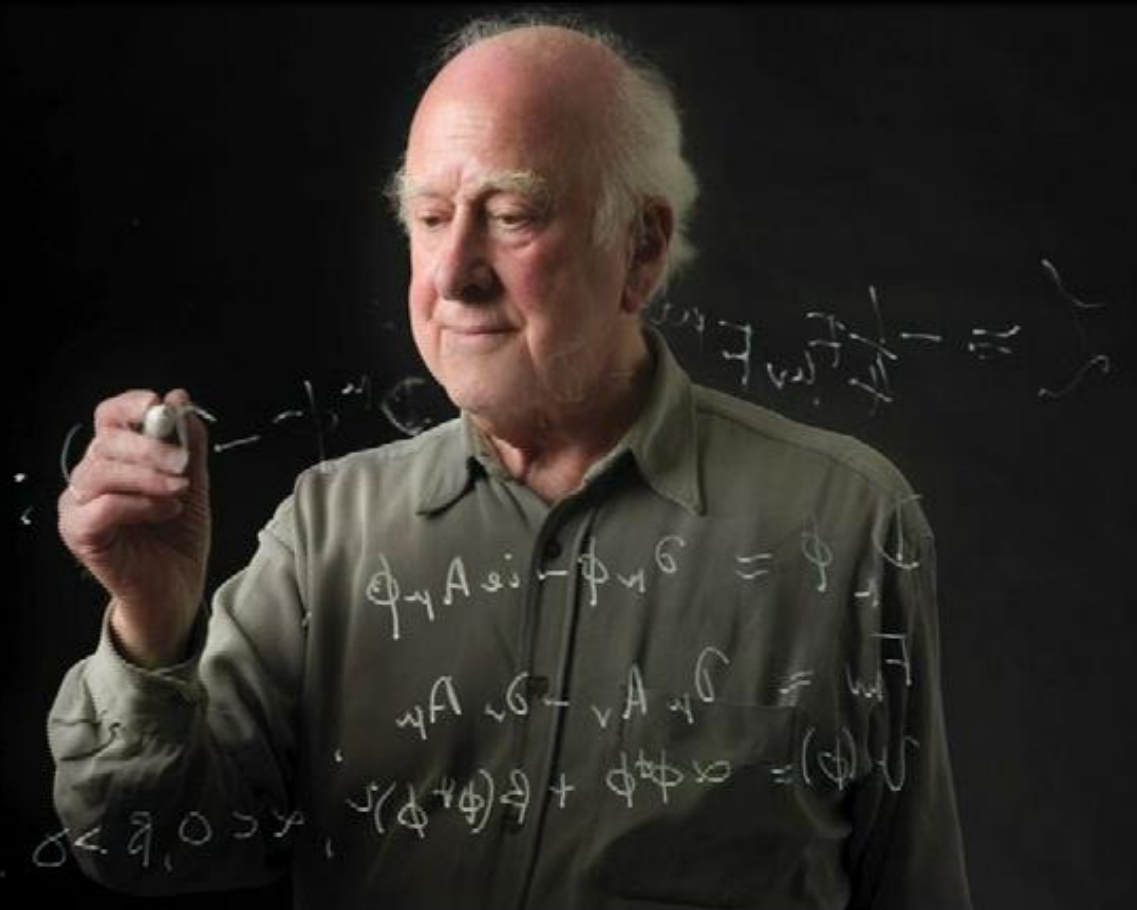


# Size of things

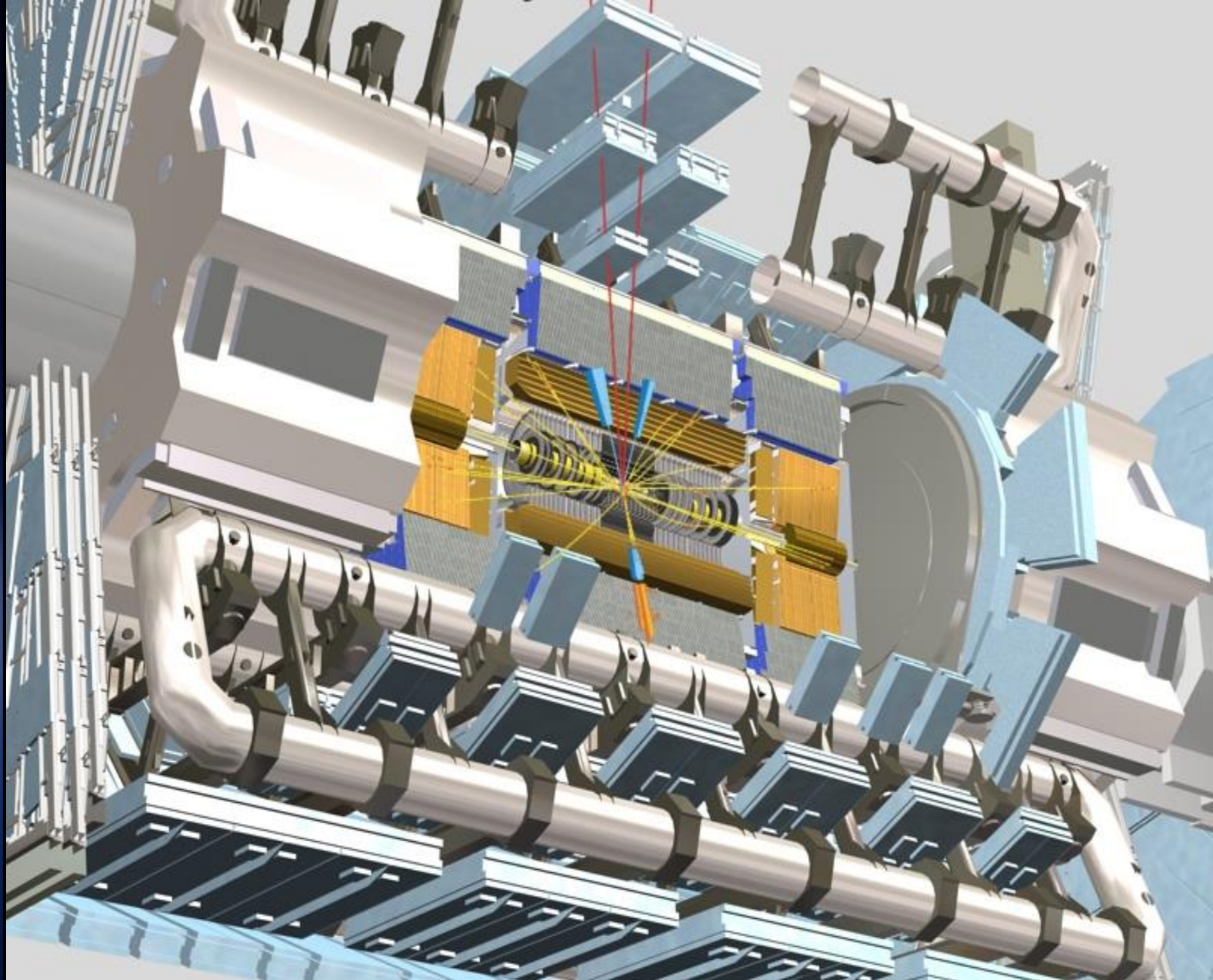
## How does CERN Measure?

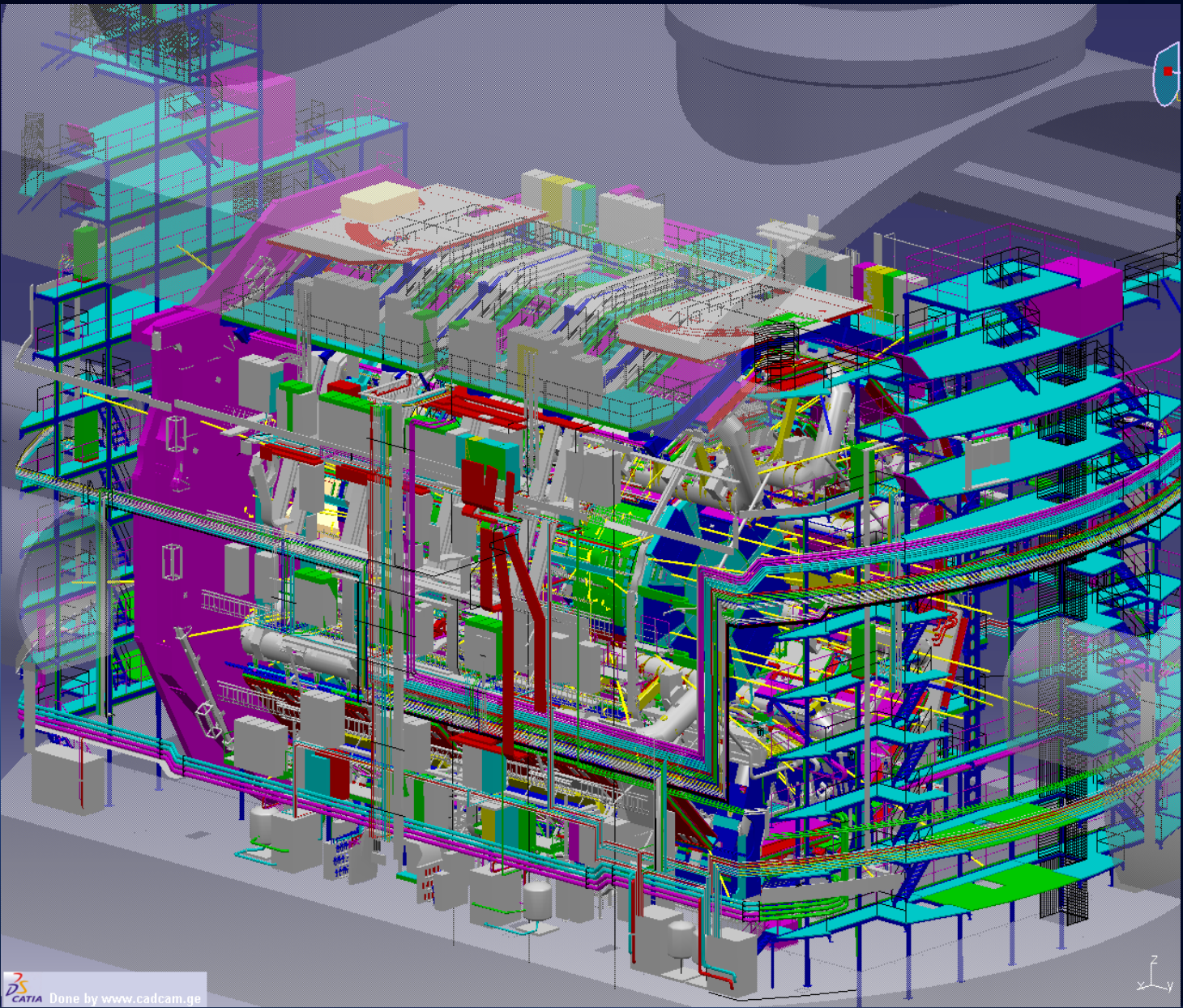


# Where do we start?

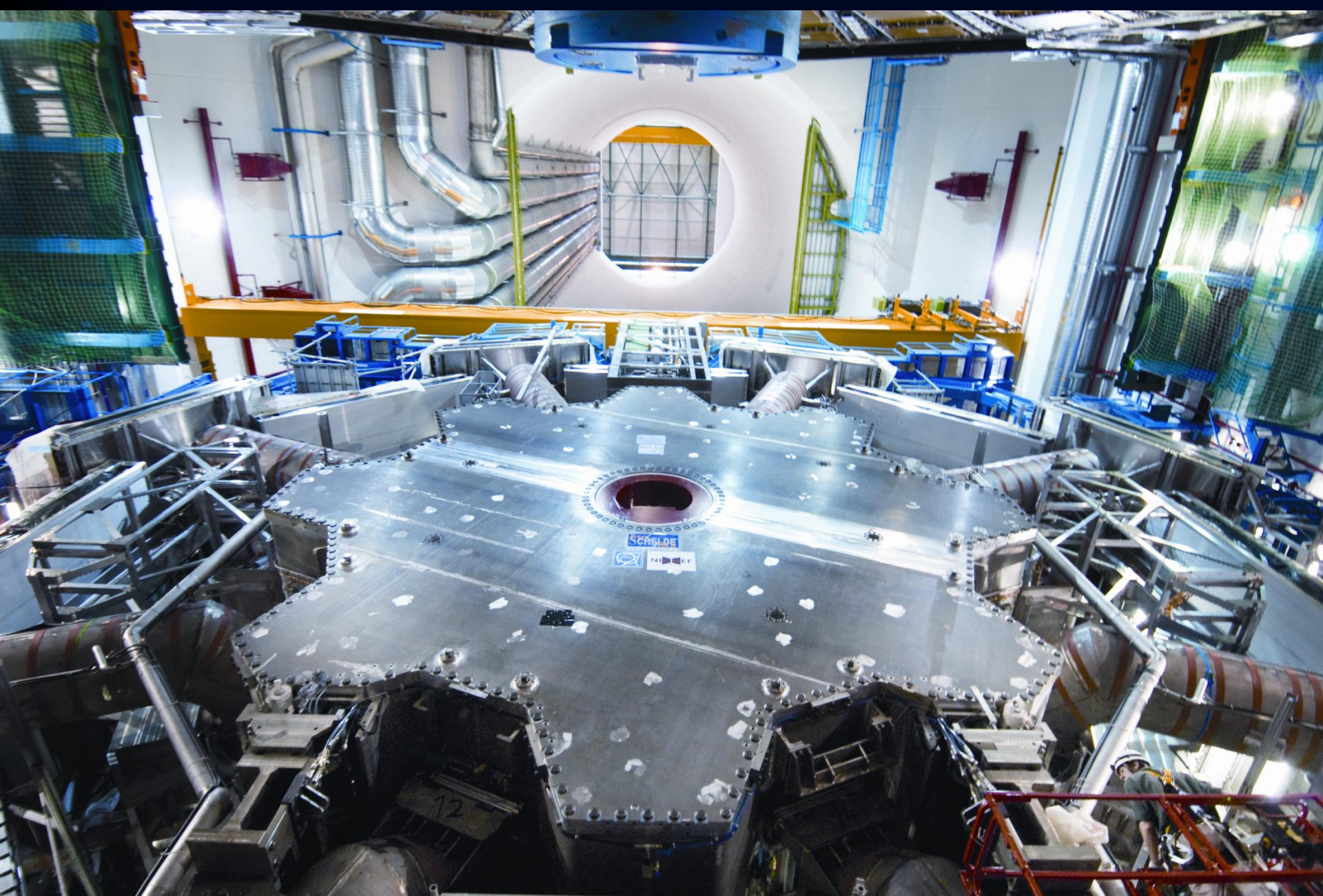








DS  
CATIA Done by [www.cadcam.ge](http://www.cadcam.ge)

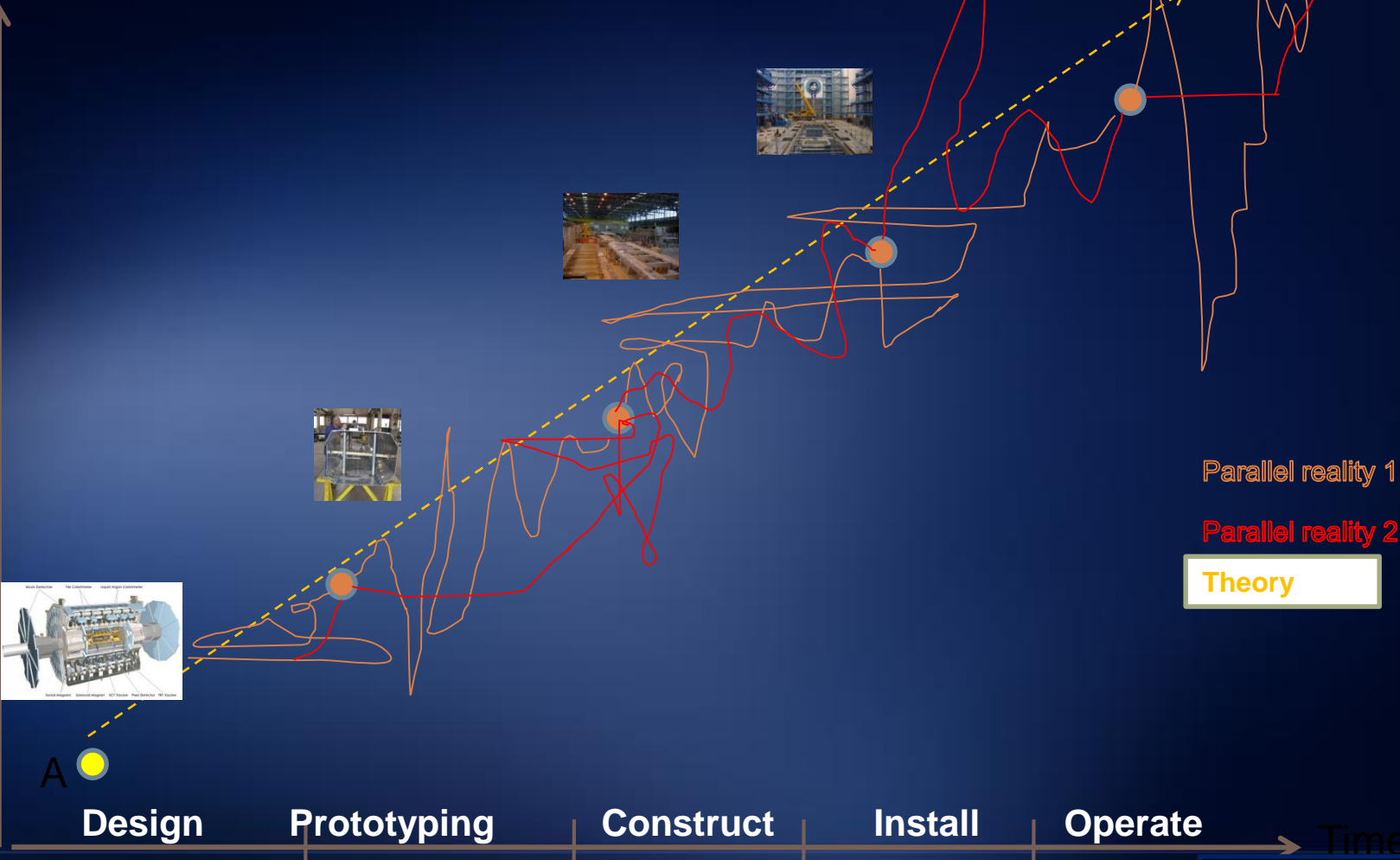




# Implementing Strategy is Not Linear



Progress



Parallel reality 1

Parallel reality 2

Theory

A

B

Design

Prototyping

Construct

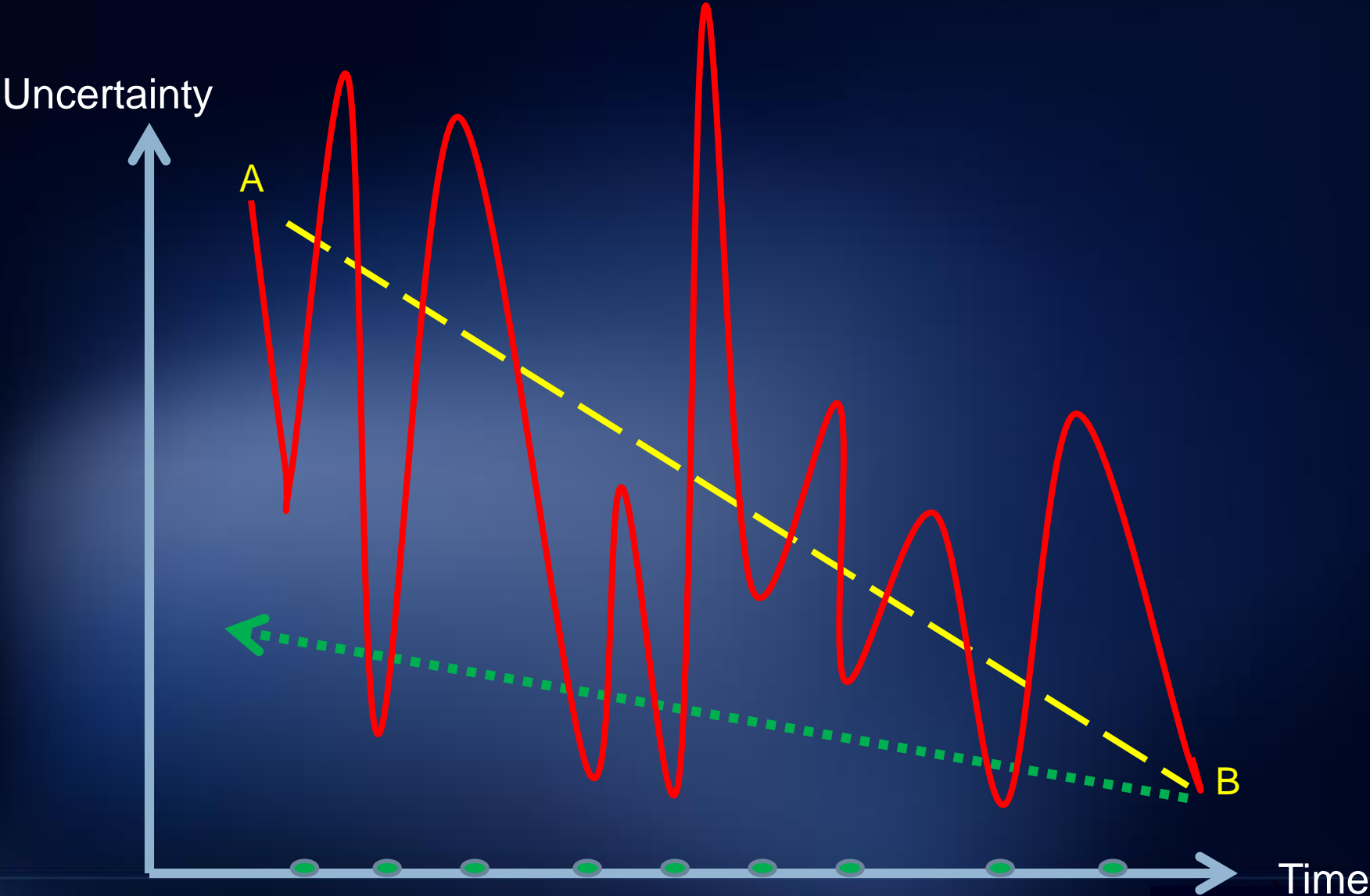
Install

Operate

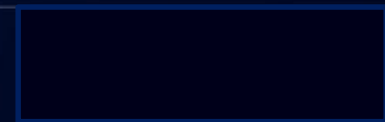
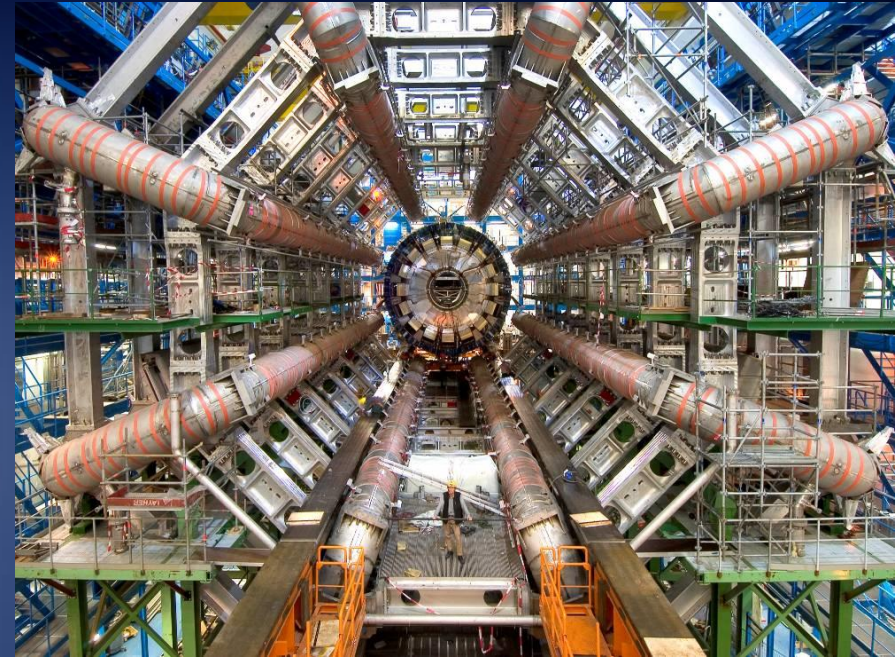
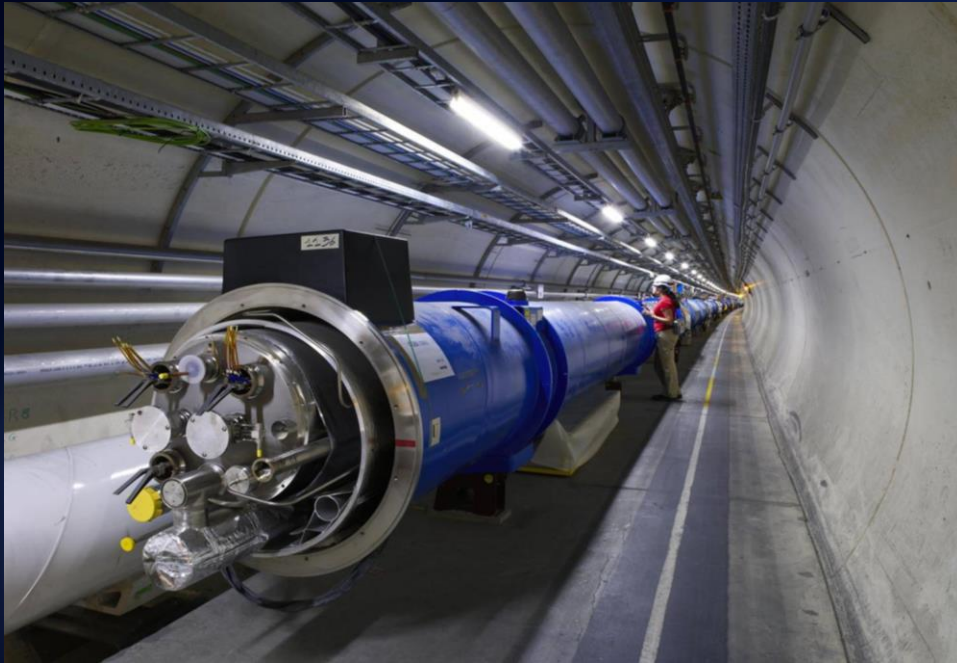
Time



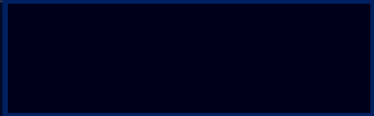
# Absorbing vs. Reducing Uncertainty



# Seeing the Micro needs the Macro (scopes)







# CERN was founded 1954: 12 European States Today: 22 Member States

- ~ 2300 staff
- ~ 730 other paid personnel
- ~ 12 000 users
- Budget (2017) ~1000 MCHF

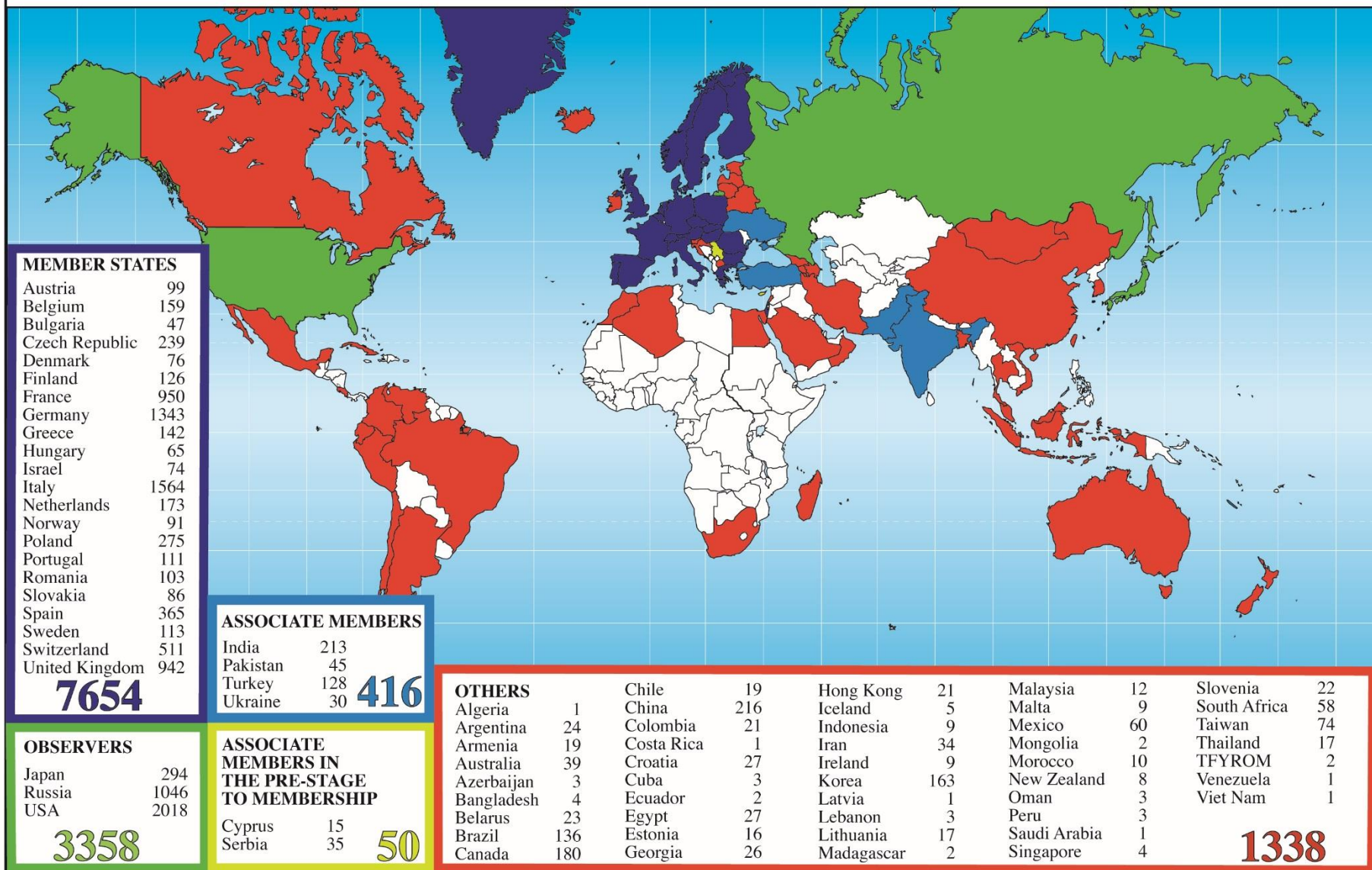
- **22 Member States:** Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.
- **2 Candidate for Accession to Membership of CERN:** Cyprus, Serbia
- **8 Observers to Council:** India, Japan, the Russian Federation, the United States of America, Turkey, the European Commission and Unesco





# A Global Reach

## Distribution of All CERN Users by Location of Institute on 12 January 2017



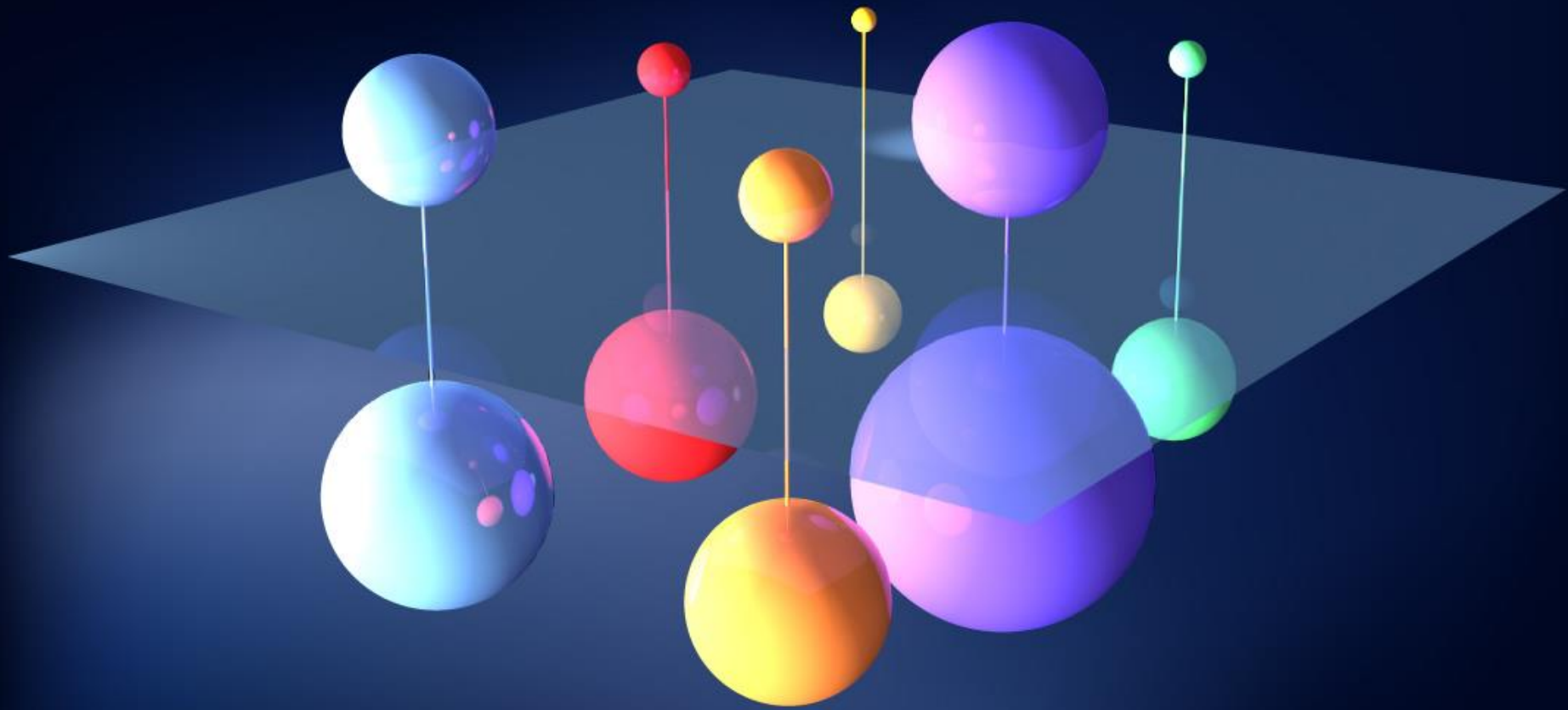


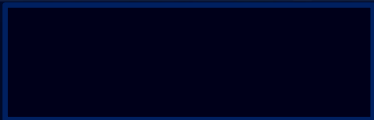
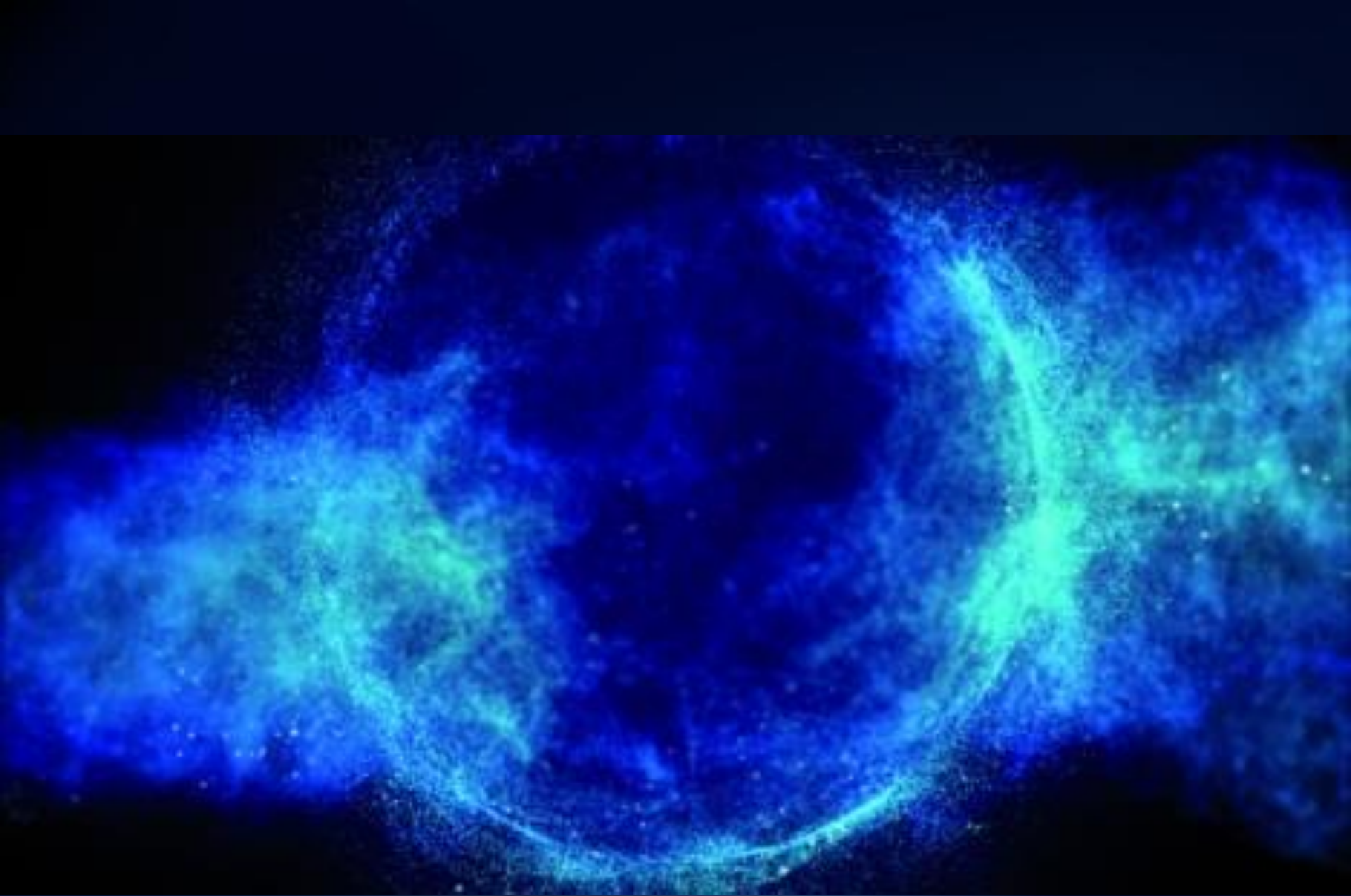
# (How) Do We Manage This?

1. Vision
2. Commitment
3. Tolerance

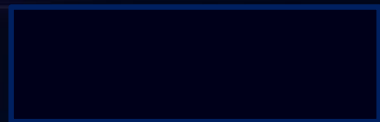
**What is Wrong with this Picture?**

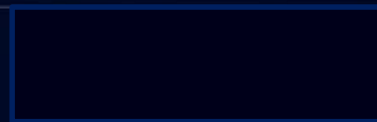
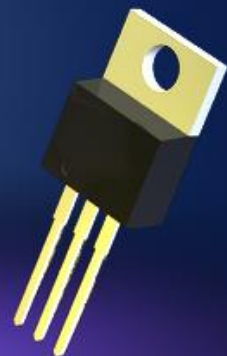
















What do you see differently?