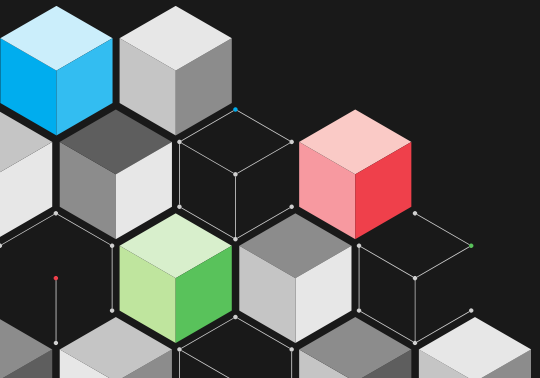
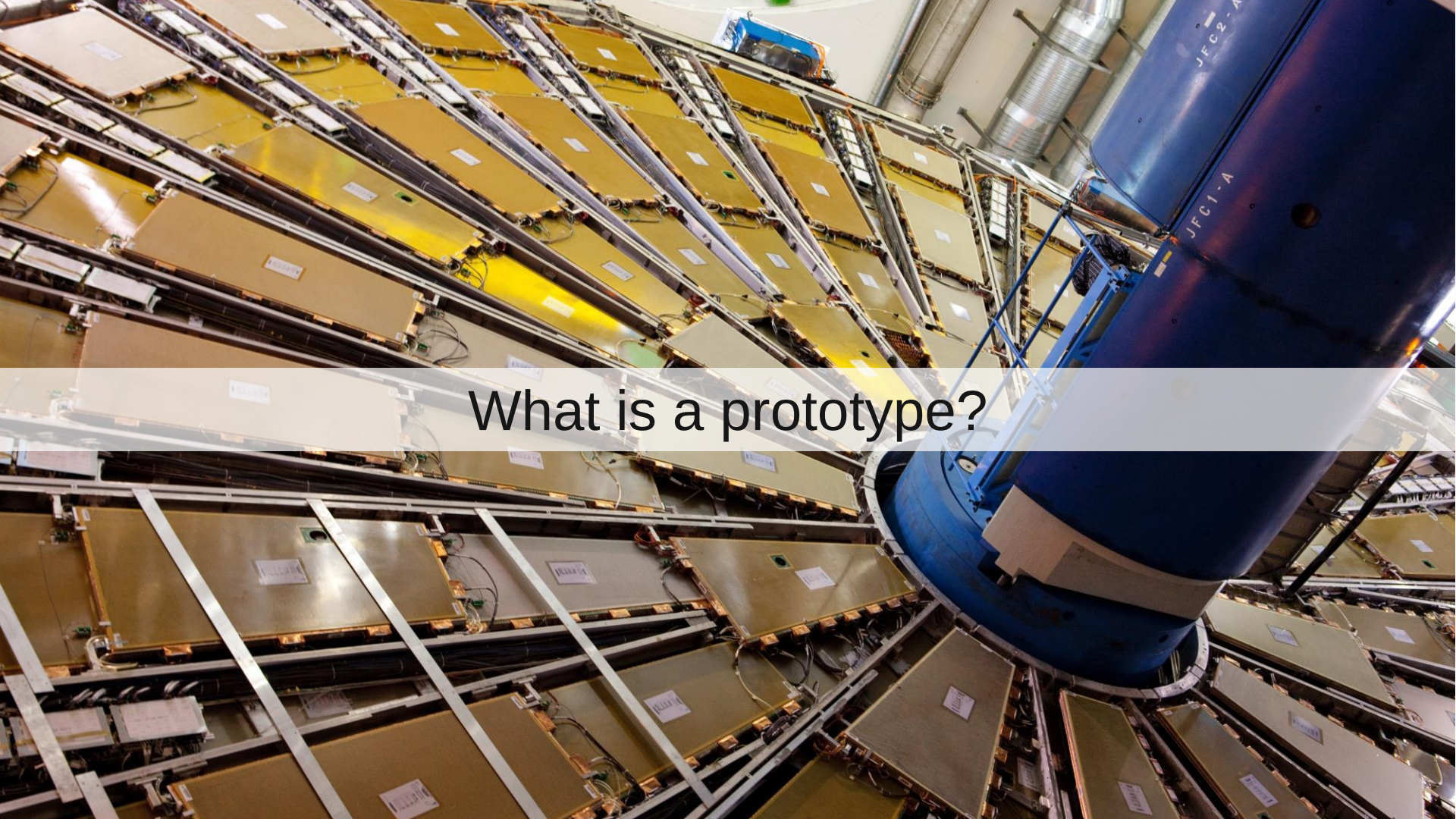
Some thoughts on Prototyping

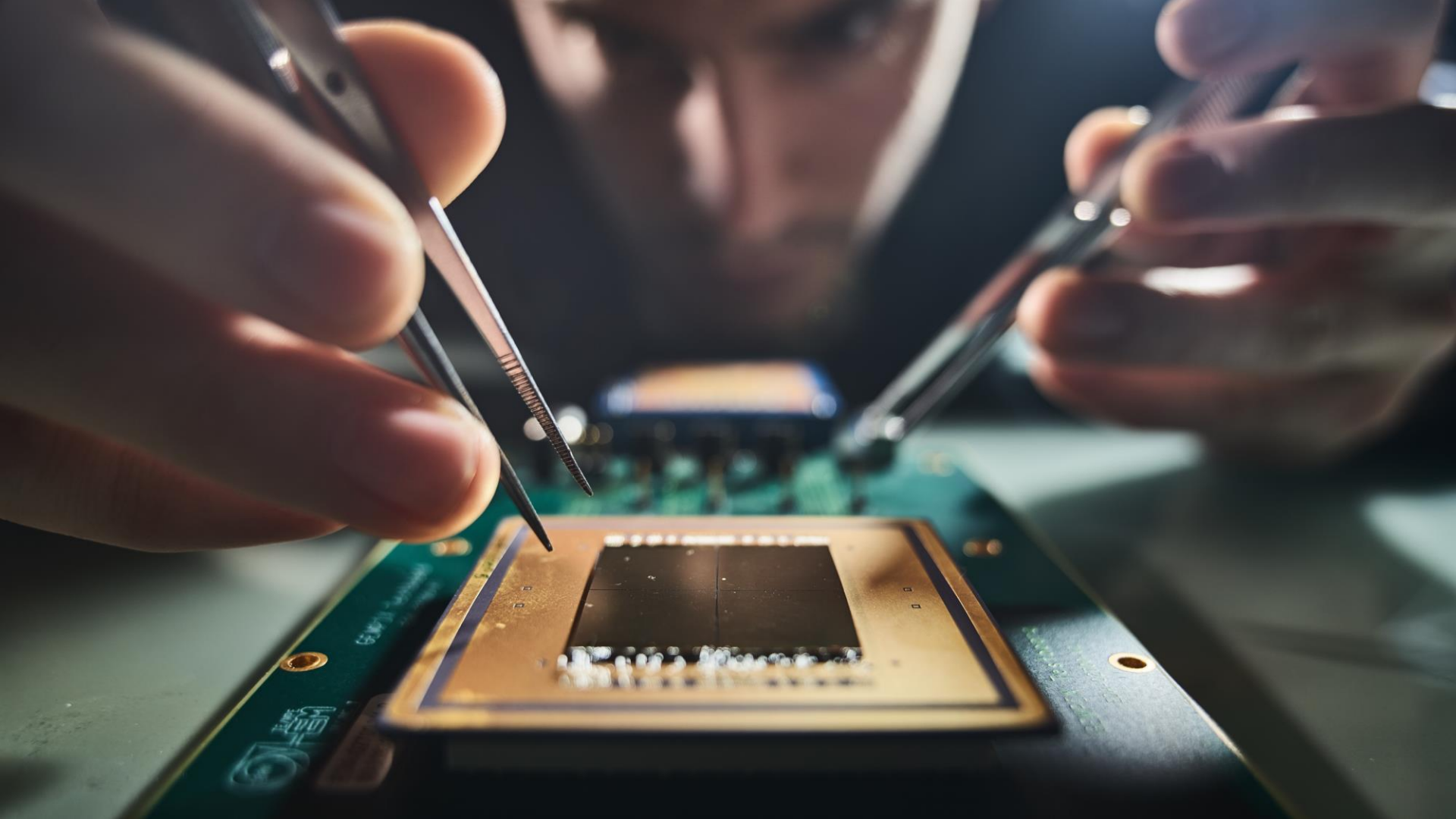
Hans Hagenes Bøe

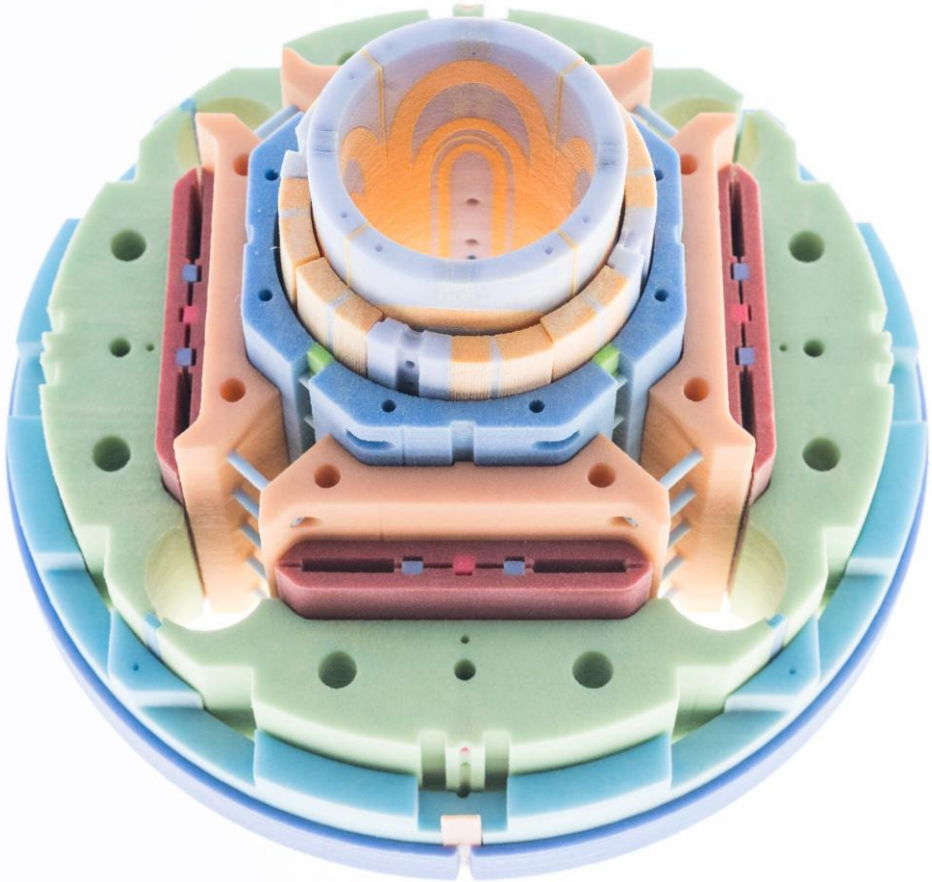




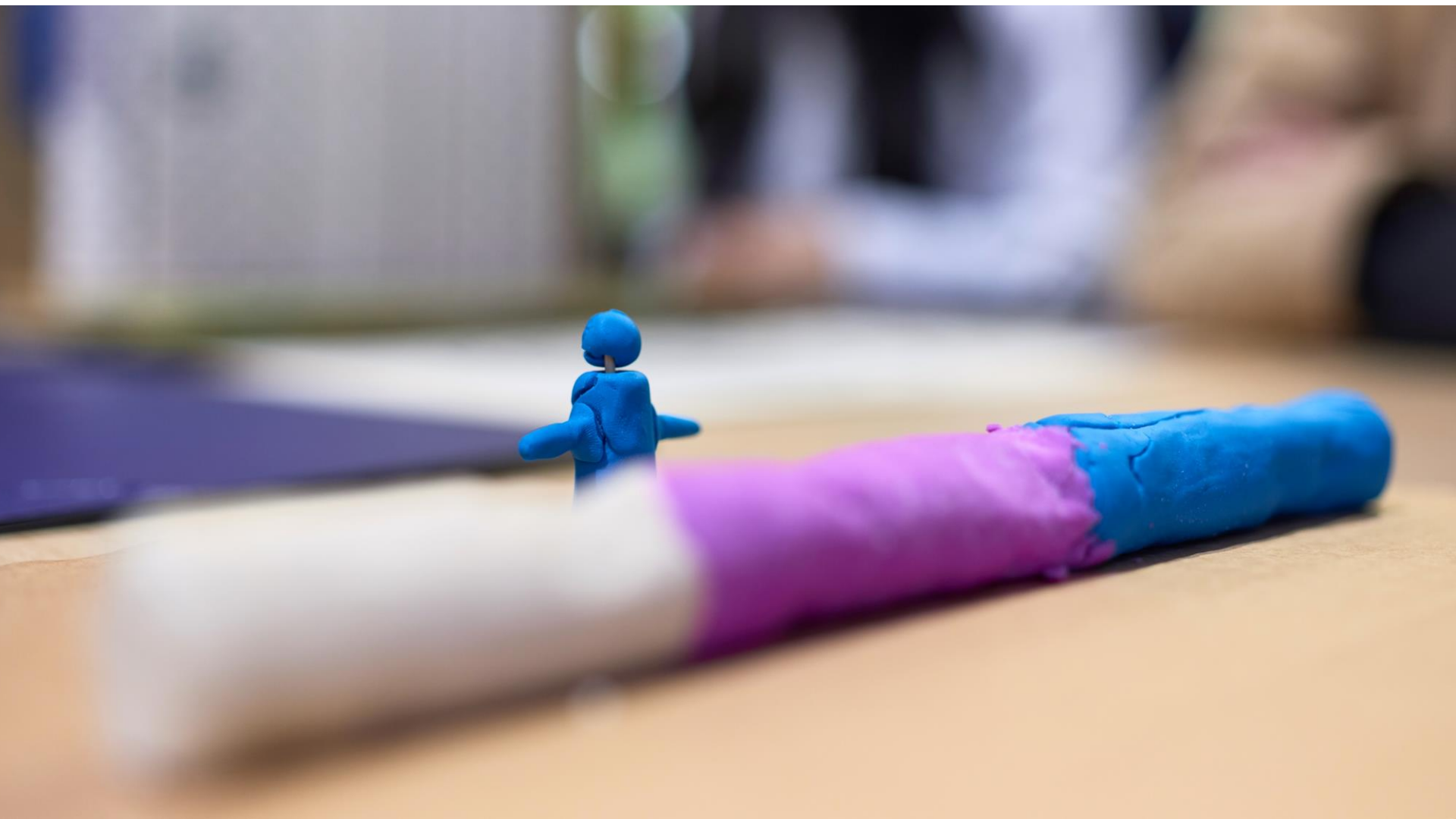
What is a prototype?

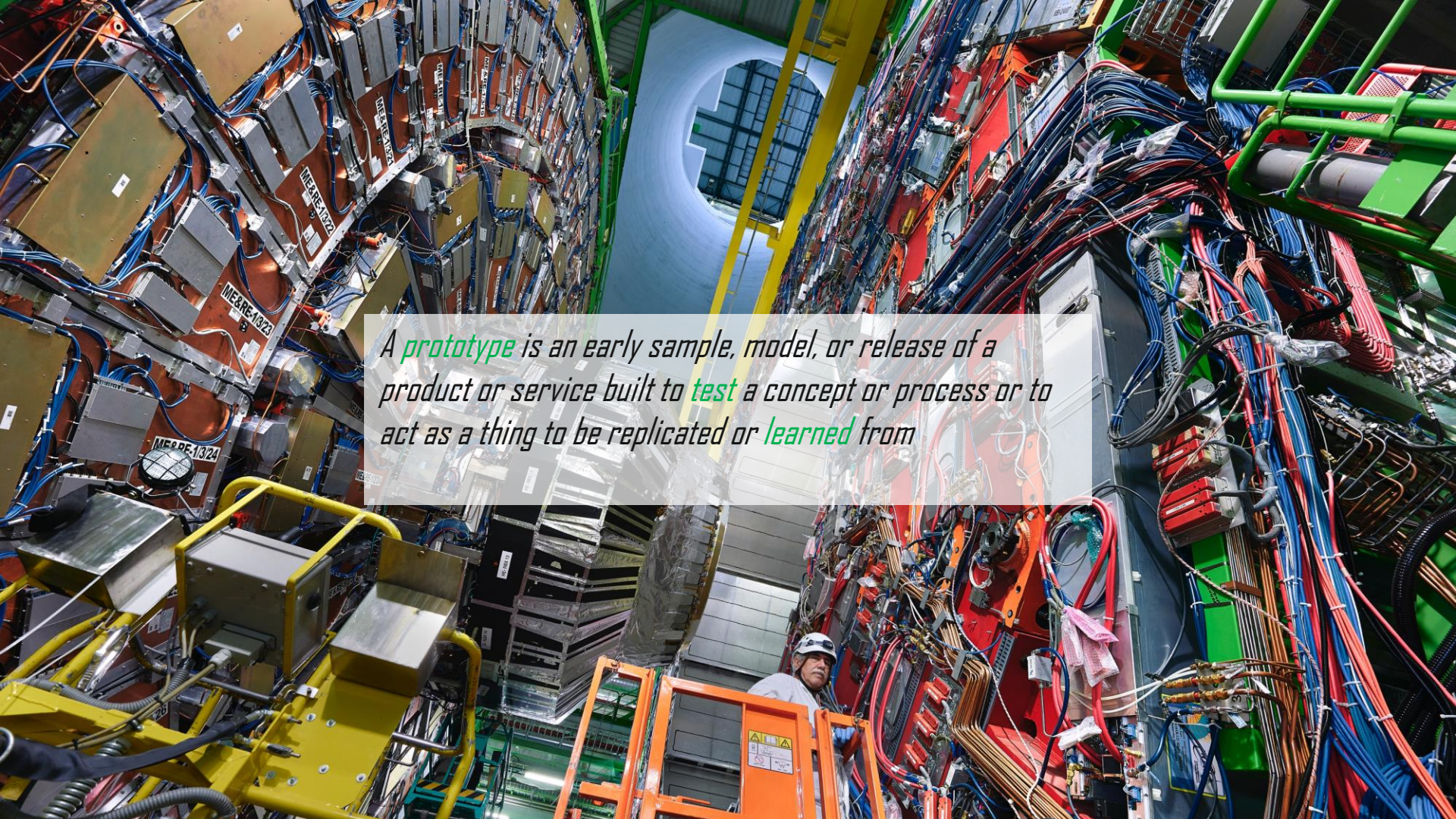
ATLAS Toroid Model Coil BO





VISITOR / VISITEUR





A prototype is an early sample, model, or release of a product or service built to test a concept or process or to act as a thing to be replicated or learned from

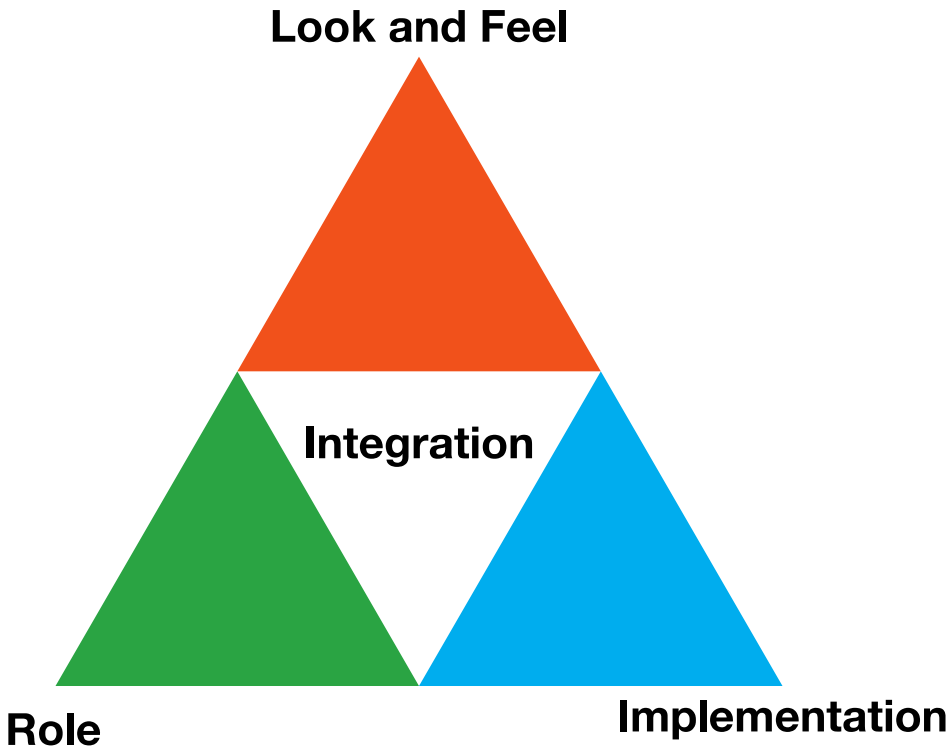
HAR DU NOEN
KRONER Å AVSE

SORGENFRI
#41
DET STORE FALLET
SYNGENDE SOLDATER
KJERNEN
TJUKK MJØLK FEITE PENGER
SORGENFRI
#58
JUNI / 2014
HALVPARTEN GÅR TIL SELGER
Gatemagasinet
SORGENFRI
#59
JULI / 2014
HALVPARTEN GÅR TIL SELGER
Gatemagasinet
SORGENFRI
#68 MAI / 2015

SORGENFRI
SORGENFRI
SORGENFRI

Gatemagasinet
SORGEN
SORGENFRI

ØSTLUND'S SKRÆDDERFORRETNING
SAN FRAN
TGR
SORGENFRI
BYASEN
HÅNDBALL



http://blogs.ischool.berkeley.edu/ict4se/files/2010/09/Prototypes_prototype.pdf

Guidelines for Prototyping

1. Just start building

Work with a bias towards action: that means if you have any uncertainties about what you are trying to achieve, your best bet is to make something. Creating a prototype will help you to think about your idea in a explicit manner, and potentially allow you to gain insights into ways you can improve your idea and bridge knowledge gaps.

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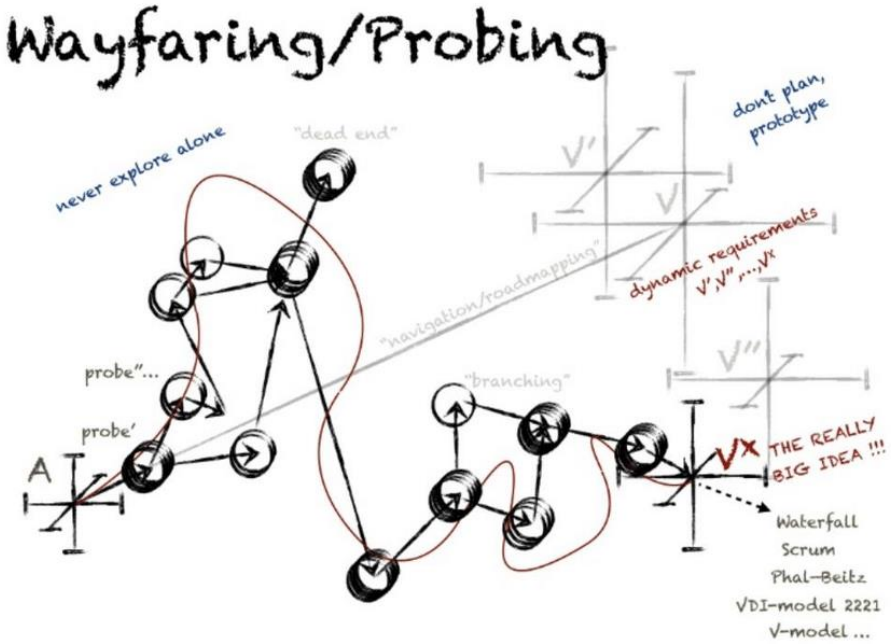
Ideas

1. Just start building



Guidelines for Prototyping

2. Don’t spend too much time

Prototyping is all about speed; the longer you spend building your prototype, the more emotionally attached you can get with your idea, thus hampering your ability to judge its merits objectively. Don’t be afraid to let go of your babies.

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FALL IN LOVE WITH THE PROBLEM AND NOT THE PROTOTYPE

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Guidelines for Prototyping

3. Remember what you're testing for

All prototypes should have a central testing issue. Do not lose sight of that issue, but at the same time, do not get so bound to it that you lose sight of other lessons you could learn.

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Critical Function

What is your critical function?

- Split up the team in two groups.
- Ideate on what the critical function of your product is. 10min
- Present to the other group what you figured out. 5min.
- Ideate on ways to test the critical function and get feedback from users. 10min
- Present to the other group what you figured out. 5min.

Guidelines for Prototyping

4. Remember who you are building the prototype for

The prototype you use for internal communication is not always the best prototype to use for external communication.

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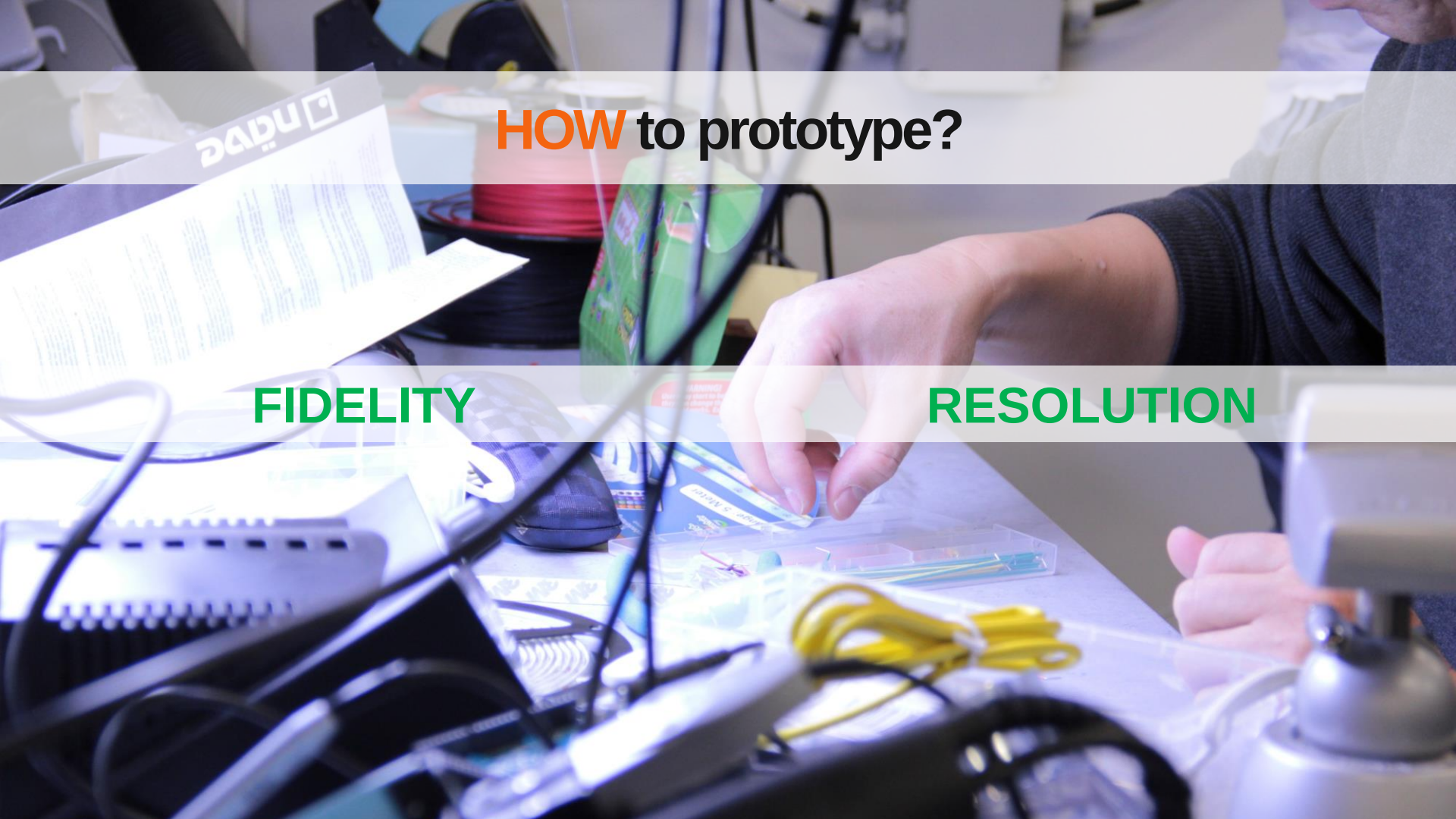
Guidelines for Prototyping

5. Break the boundaries of assumptions

Your imagination merely limits the use of different materials and tools in prototyping. Learn how to see things through their potential instead of their limitations and definitions.



HOW to prototype?

FIDELITY

RESOLUTION

“Kjært barn har mange navn”

Sketching
Role-Play
Storyboard
Cardboard Mock up
Wizard of Oz
Wireframing

Functional Prototype
Critical Function prototype
Virtual Prototype
Proof of Concept
Minimum Viable Product
Pre-Production Prototype

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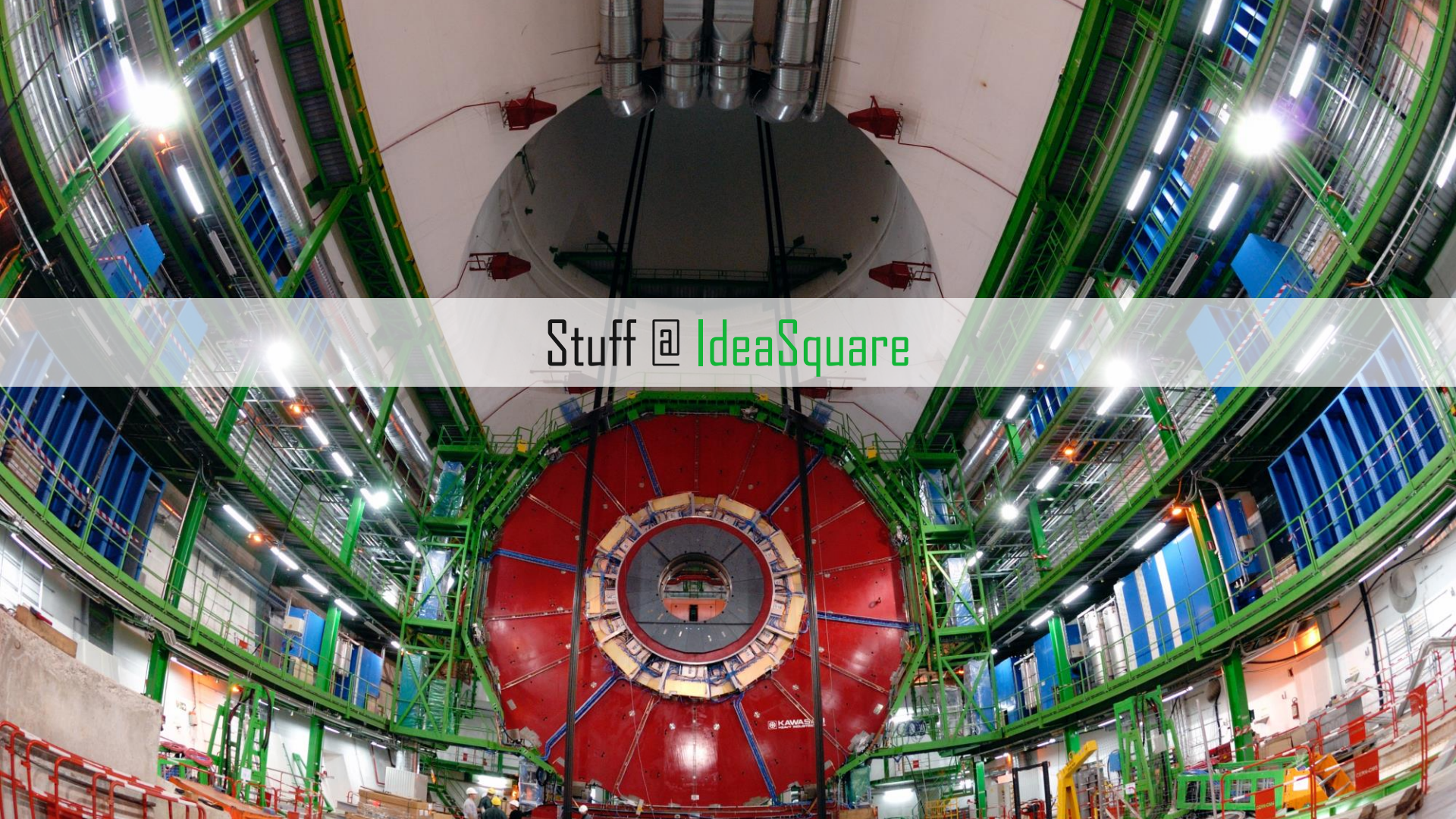

Stuff @ IdeaSquare

https://www.compliantmechanisms.byu.edu/gallery

https://wyss.harvard.edu/technology/foams-soft-robotic-artificial-muscles/

MAKE A VIDEO OF YOUR PROTOTYPE IF IT IS SUPPOSED TO FUNCTION

GOLDEN rules of prototyping

1. When in doubt: Prototype
2. It is never to early or to late to Prototype
3. Often the fastest way to learn is to Prototype

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Ping Pong Launcher

- Design a device that can launch a ping pong ball using simple prototyping materials.
- Each group will be given the same set of materials
- You will be given 30 minutes to build and test your prototype(s)
- Final and counting test will be done after the 30 minutes is finished.
- The device needs to be placed at the launch table and operated by one person only

FINAL TEST : 5 shots at the target

- 2 pt – Launching a ping pong ball
- 2 pt – Knocking down 5 or more cups
- 1 pt – Bonus for the prototype that launches the farthest
- 1 pt – Each new test done before the Final Test gives one point

Interesting Papers on Prototyping

Classification Framework for Prototypes

What does prototypes prototype?

http://blogs.ischool.berkeley.edu/ict4se/files/2010/09/Prototypes_prototype.pdf

Prototype Driven Development

'Finding One's Way': Re-Discovering a Hunter-Gatherer Model based on Wayfaring

https://www.researchgate.net/publication/295644059_'Finding_One's_Way'_Re-Discovering_a_Hunter-Gatherer_Model_based_on_Wayfaring

A Simultaneous, Multidisciplinary Development and Design Journey – Reflections on Prototyping

https://www.researchgate.net/publication/282655334_A_Simultaneous_Multidisciplinary_Development_and_Design_Journey_-_Reflections_on_Prototyping

Exemplifying Prototype-Driven Development through Concepts for Medical Training Simulators

https://www.researchgate.net/publication/335630351_Exemplifying_Prototype-Driven_Development_through_Concepts_for_Medical_Training_Simulators

Creating Dynamic Requirements through Iteratively Prototyping Critical Functionalities

https://www.researchgate.net/publication/306024324_Creating_Dynamic_Requirements_through_Iteratively_Prototyping_Critical_Functionalities

Design Fixation

Fixation on premature concept choices - a pitfall of early prototyping?

https://www.researchgate.net/publication/335631093_Fixation_on_premature_concept_choices_-_a_pitfall_of_early_prototyping

Design and other types of fixation

https://www.sciencedirect.com/science/article/pii/S014269X96000233

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Questions? Comments?

Contact information:
Phone: +41 754119674 / +47 98621481
Email: hans.hagenes.boe@cern.ch

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Let's have a cup of coffee and make it happen!