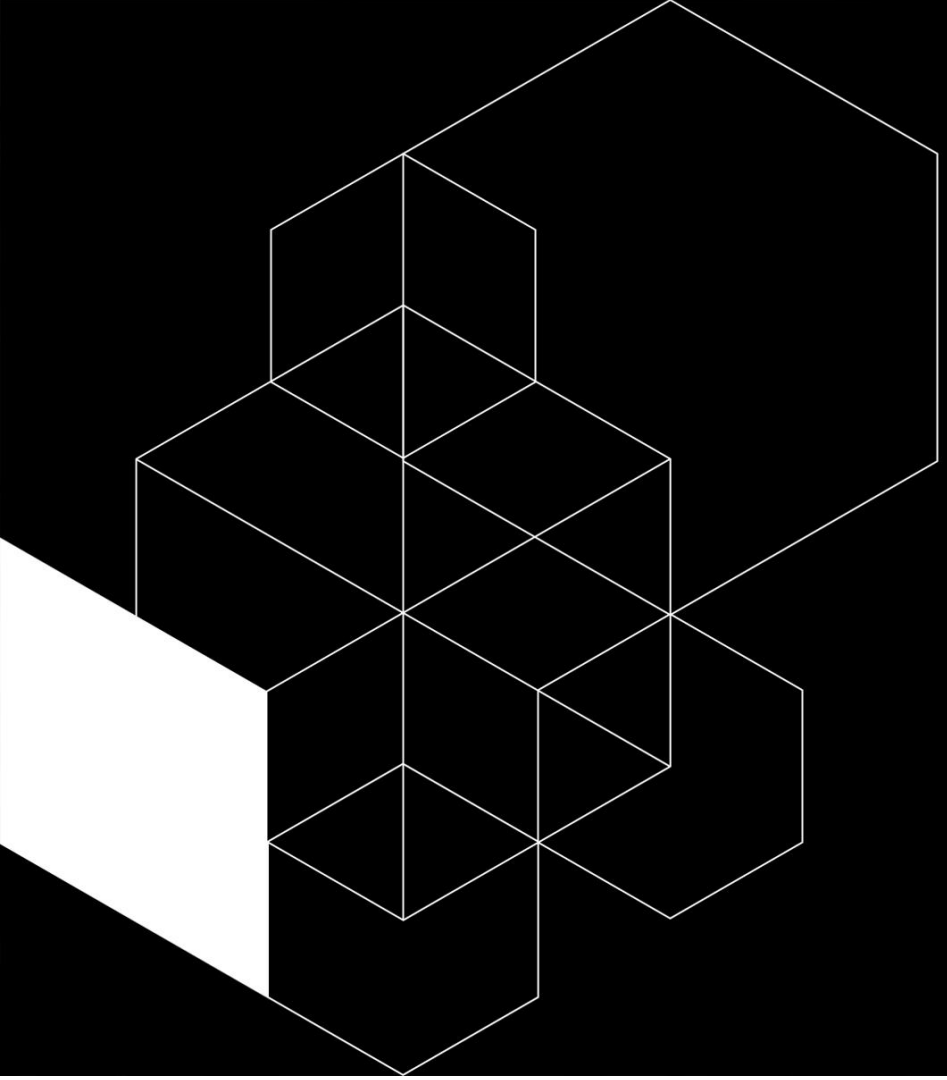


INTRODUCTION TO PROTOTYPING

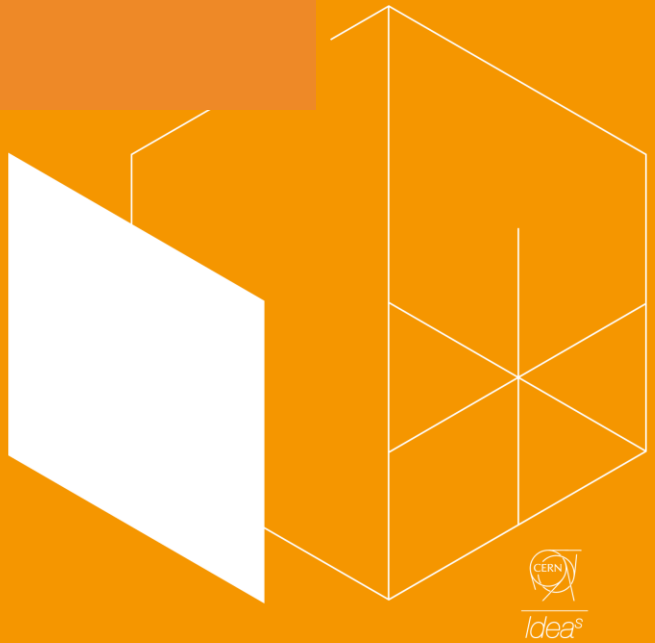
CBI A3

Dina Zimmermann

06.11.2024

CERN

Ideas



WHAT IS A PROTOTYPE?

“An approximation of the product along one or more dimensions of interest” (Ulrich & Eppinger, 2016)

“Any representation of a design idea, regardless of the medium” (Houde and Hill, 1997)

“A physical representation of your idea or project” (Dina, 2024)

WHY DO WE PROTOTYPE?

🔨 Exploration through action

Experimenting and learning by doing

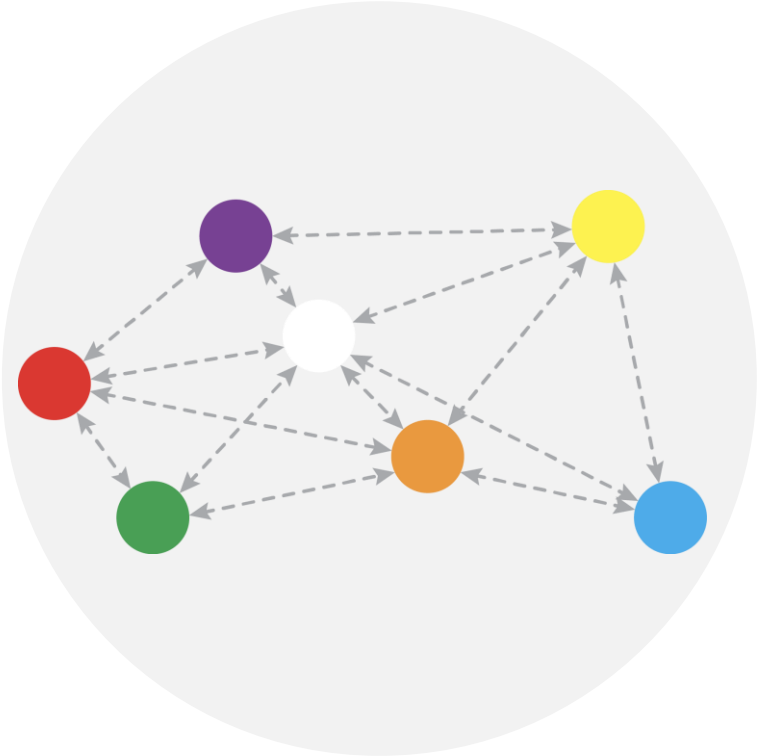
🧐 Challenging assumptions

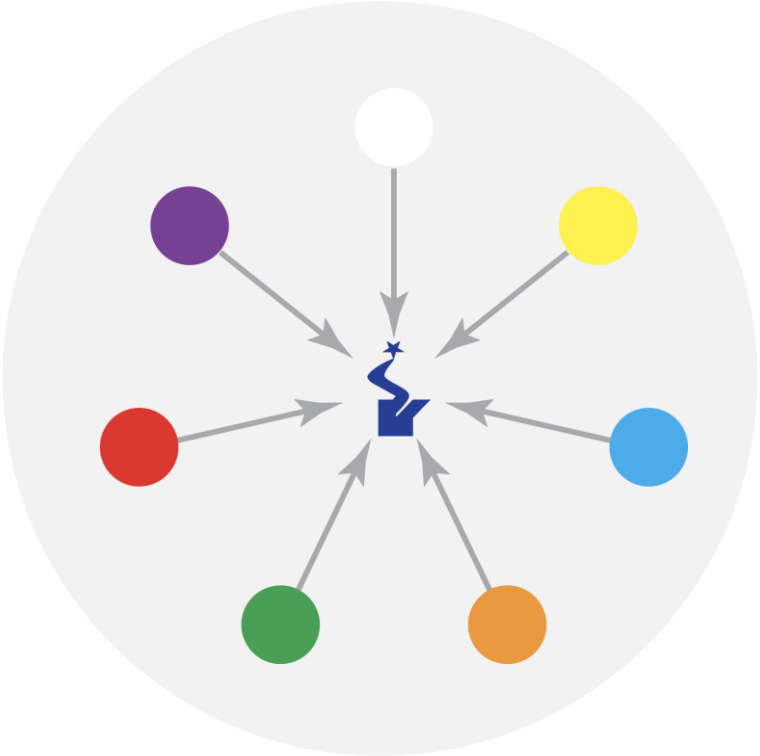
Investigate assumptions through building and testing, instead of theoretically thinking

👦👦👦 Internal communication

Can make internal communication more focused

INTERNAL COMMUNICATION





WHY DO WE PROTOTYPE?

Exploration through action
Experimenting and learning by doing

Challenging assumptions
Investigate assumptions through building and testing, instead of theoretically thinking

Internal communication
Can make internal communication more focused

External communication
Tool to communicate, test and validate with externals

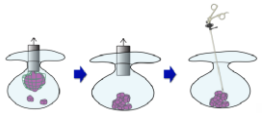
Creating serendipity
Create unplanned discoveries

THE FIDELITY OF THE PROTOTYPE

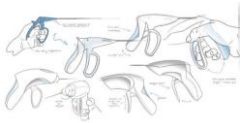
Fidelity refers to how close a prototype is to the final product

Low fidelity

High fidelity

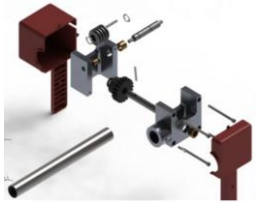


Concept visualization



Sketching

Quick & dirty mockup

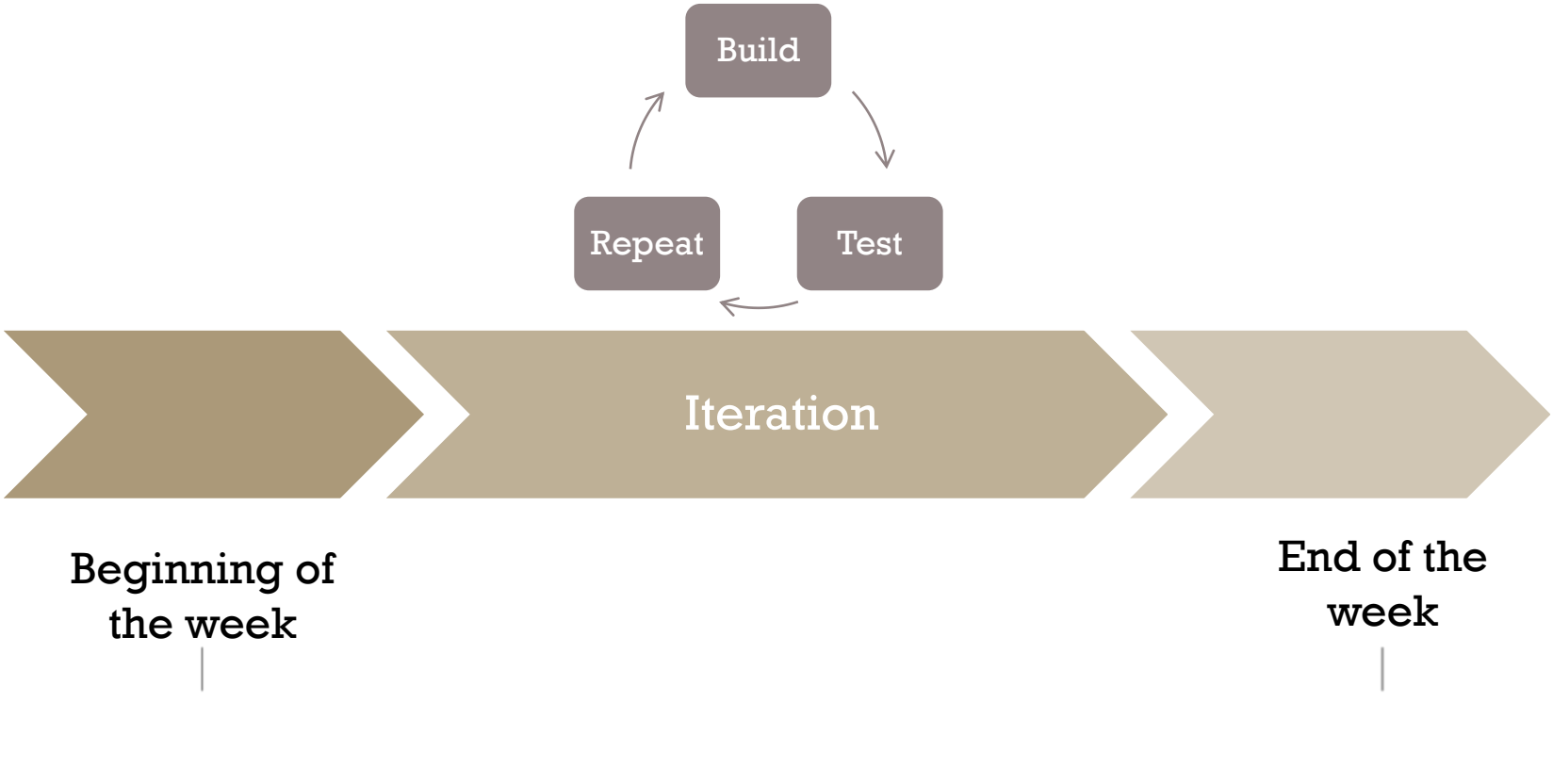


3D model

Functional Prototype

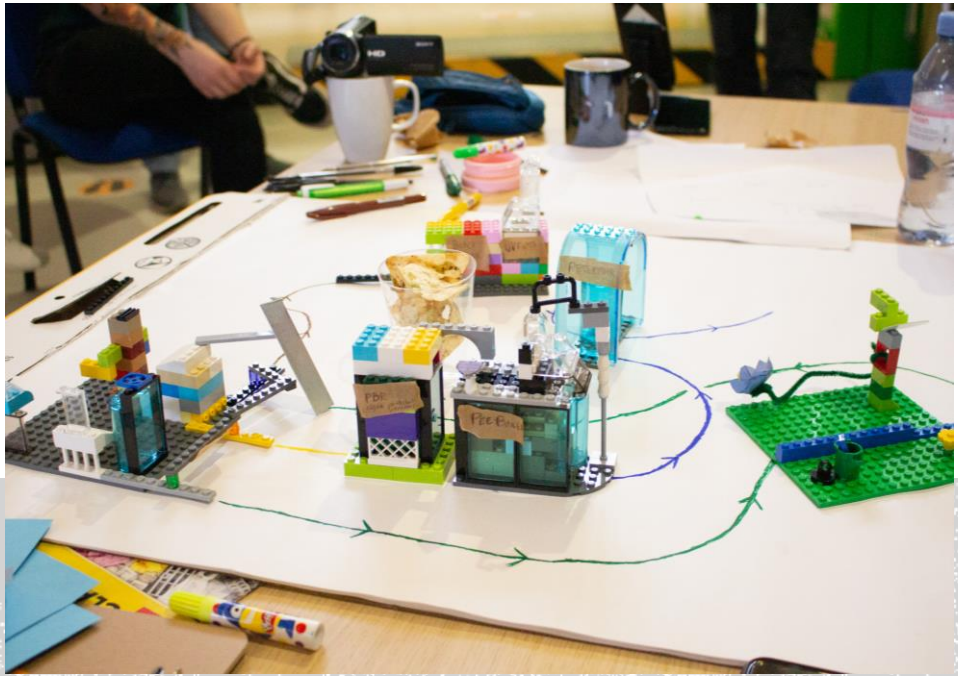
Pre-production prototype

© Carlye Lauff, University of Colorado Boulder


Build
Test
Repeat
Iteration
Beginning of the week
End of the week

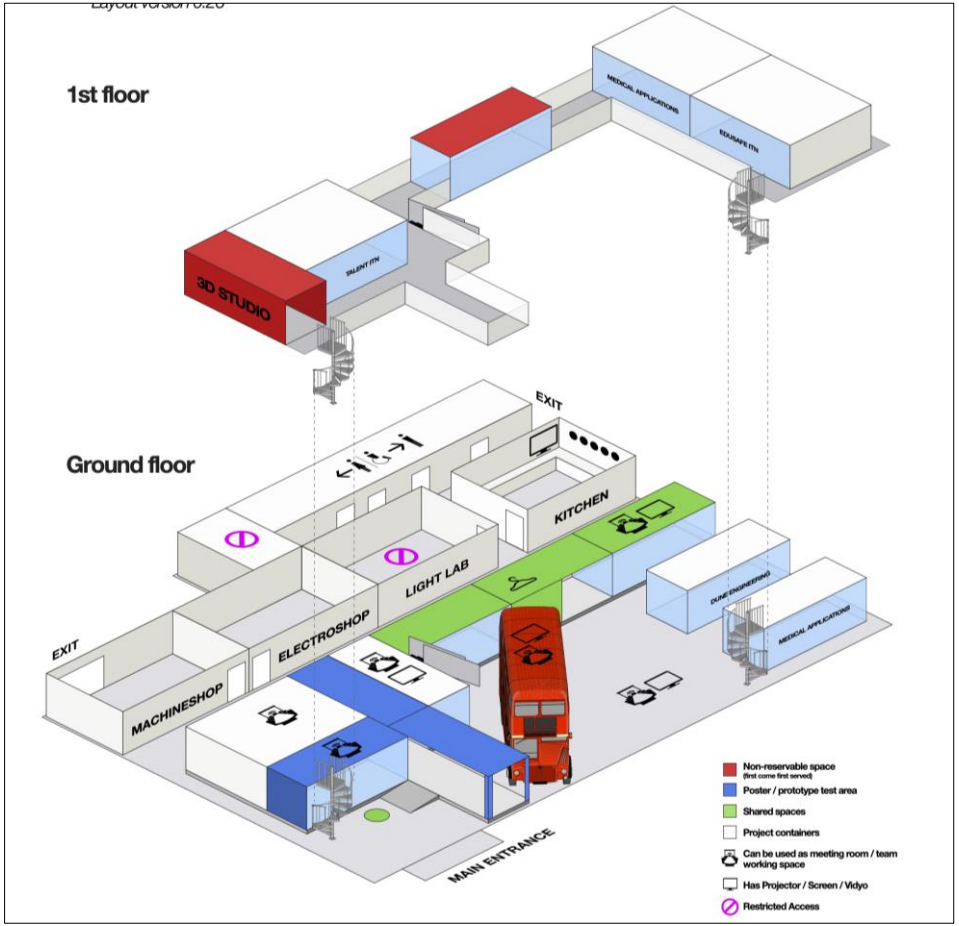
TYPES OF PROTOTYPES

- Dark Horse Prototype
- Functional Prototype
- Critical Prototype
- Digital Prototype
- Mechanical Prototype
- Proof of Concept
- Minimum Viable Product
- Pre-Production Prototype
- Role-Playing Prototype
- Storyboard
- Lego Prototype
- Paper prototype
- User-Driven Prototype
- Wizard of Oz
- Tabletop Prototyping
- Part-X Is Finished Prototype

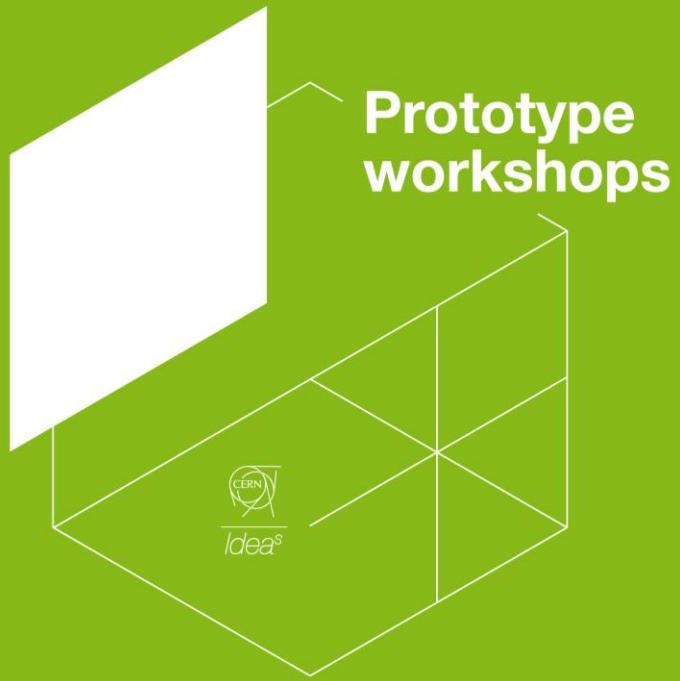


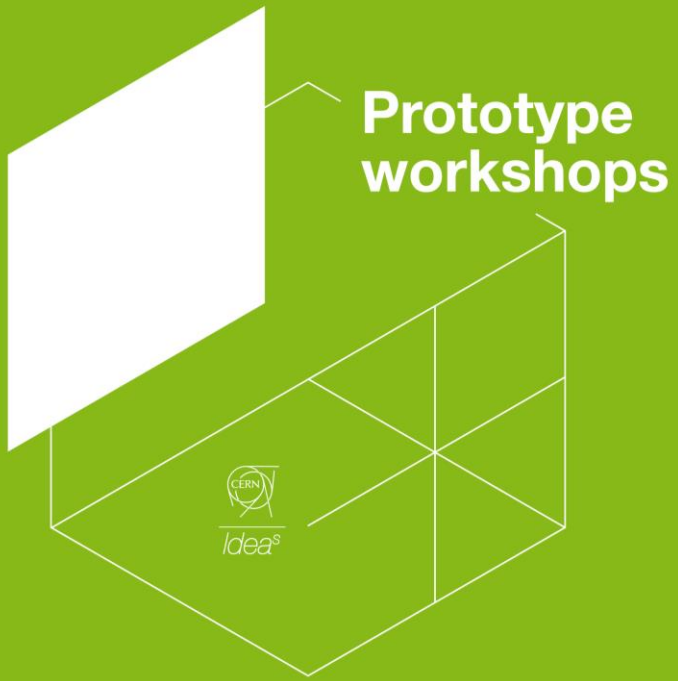
SYSTEMS

ROLEPLAY


1st floor
MEDICAL APPLICATIONS
EDUCAFE ITN
SILENT ITN
3D STUDIO
Ground floor
EXIT
KITCHEN
LIGHT LAB
ELECTROSHOP
EXIT
MACHINESHOP
DUNE ENGINEERING
MEDICAL APPLICATIONS
MAIN ENTRANCE
Non-reservable space
(first come first served)
Poster / prototype test area
Shared spaces
Project containers
Can be used as meeting room / team working space
Has Projector / Screen / Vidyo
Restricted Access

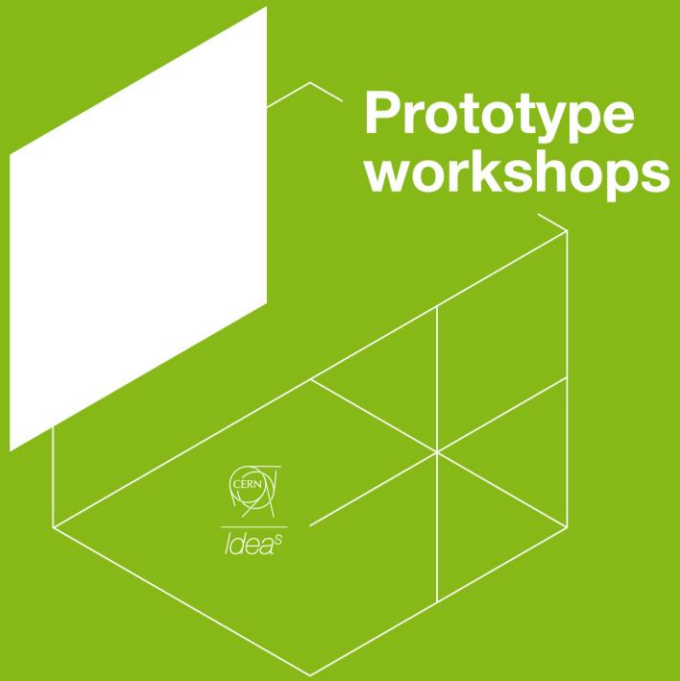
THE MACHINE SHOP

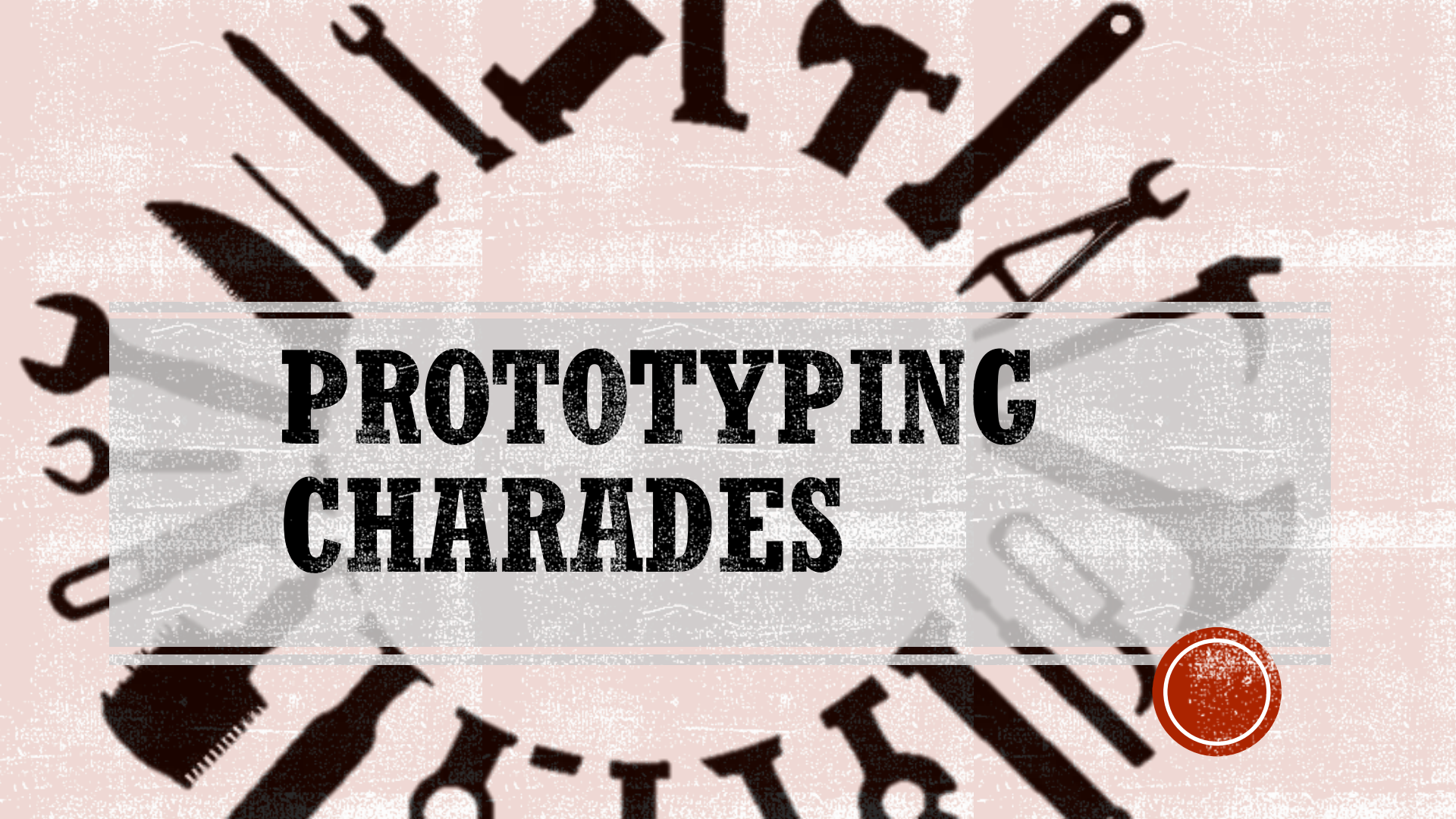




THE ELECTRO SHOP

THE 3D STUDIO





PROTOTYPING CHARADES

MOCK-UP

EXPLAIN

MIMING

SKETCH