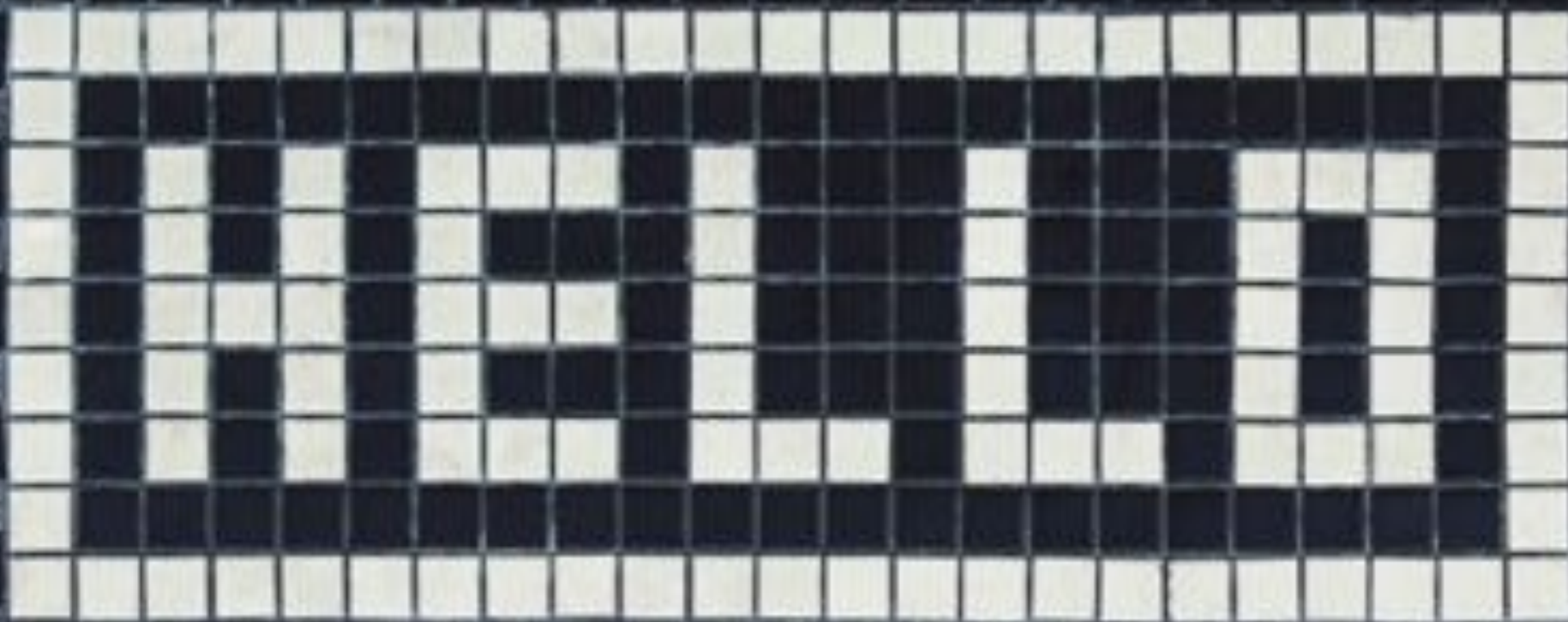




Interreg EU project TRANSUNIV Smart Hackathon 2021

Closing ceremony – 14 March 2021



We start at 14.00 PM



Peter Bertels, PhD

peter.bertels@norsu.eu
+32 474 87 40 95
twitter: @pbertels



Paul Bertels, MSc

paul.bertels@norsu.eu
+32 498 12 18 11
twitter: @paulbertels



Interreg

France-Wallonie-Vlaanderen



UNION EUROPÉENNE
EUROPESE UNIE



TRANSUNIV



TRANSUNIV project

TRANSUNIV: <http://transuniv.eu/en/>

- **January 2018 – March 2021**

- **Objectives**

To build a sustainable cooperation between academic partners and socio-economic actors

Facilitate the integration of the labor market of Master Students and PhD Researchers

- **Actions**

Bootcamps/Smart Hackathon; Trainings; Company visits; Job Fairs; Mobility grants

- **Tools**

Smart Hackathon

Goals of this 48 hour hackathon

1. Design Thinking: learning by doing
2. Networking opportunities
3. Prepare for the future
4. Having fun!!!



Real company challenges

AGC

Hubo

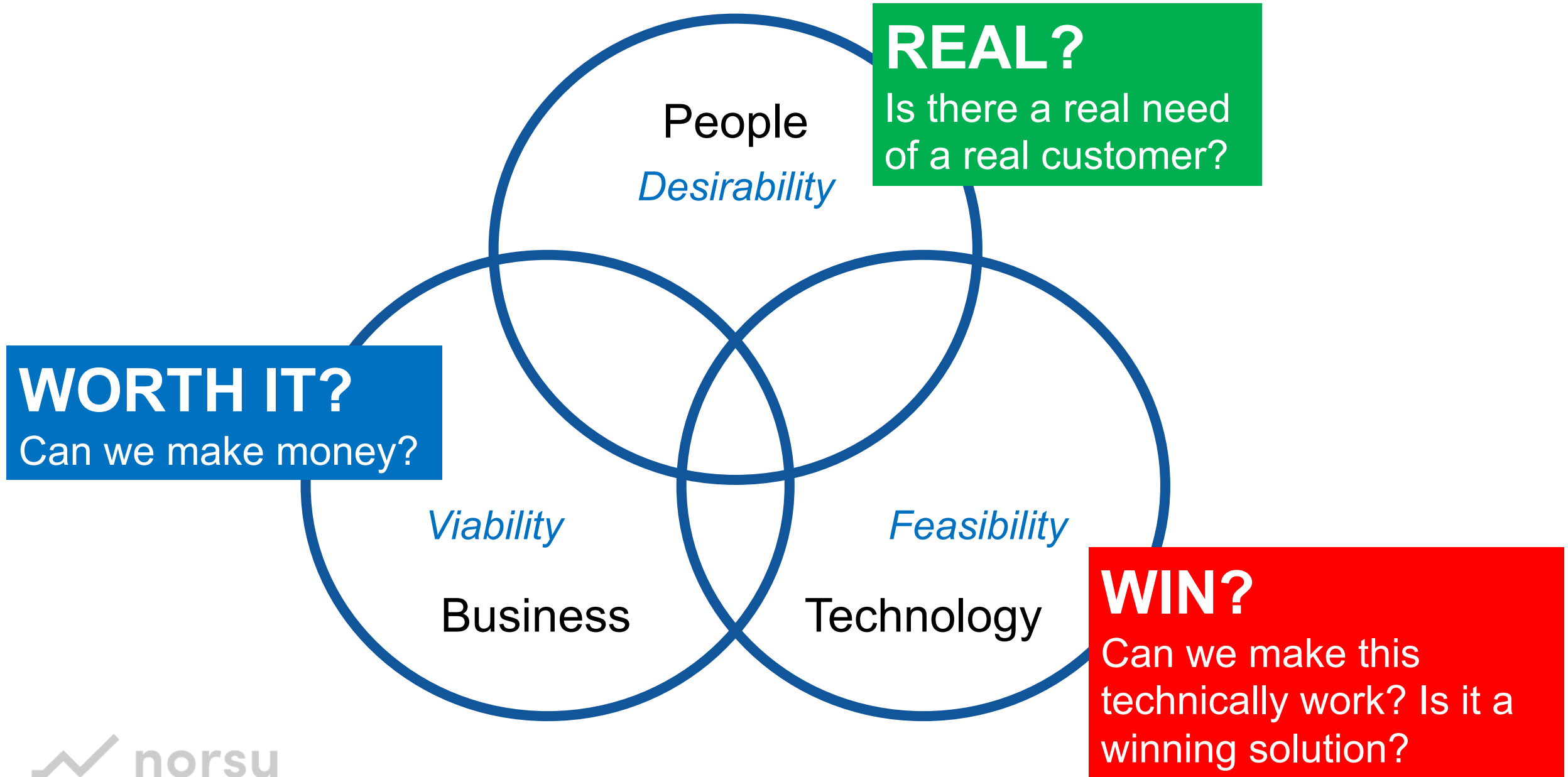


Melexis
ENGINEERING

ScioTeq



 **ILUNO**







Jury



Michaël Demeyere
AGC Glass Europe



Stef Tas
Hubo



Georges Libeert
Libeert



Matthieu Van Malleghem
Melexis



Jean-Christophe Monfret
ScioTeq



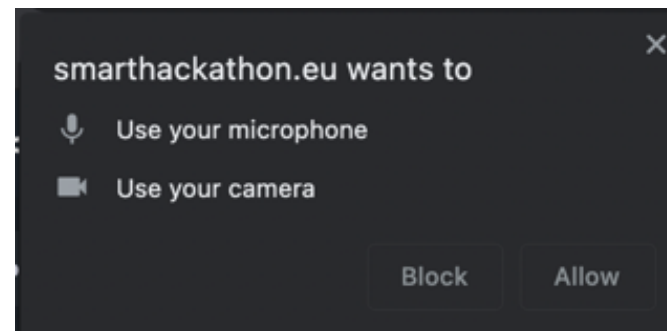
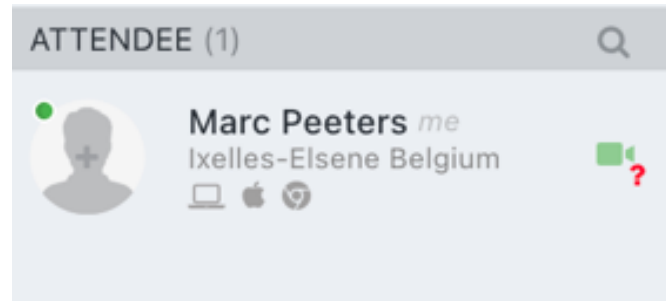
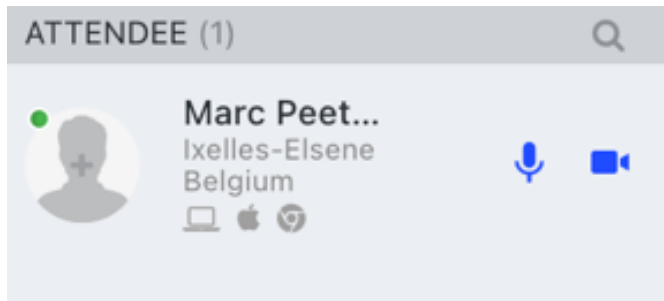
Philippe Malysse
Vanraes



Samuel Ceuninck
iLuno

Jury presentation

Please click the Blue Camera button



Criteria

- Creativity
- Vision & potential
- Business Model
- Technology
- Prototype
- Sustainability
- Presentation

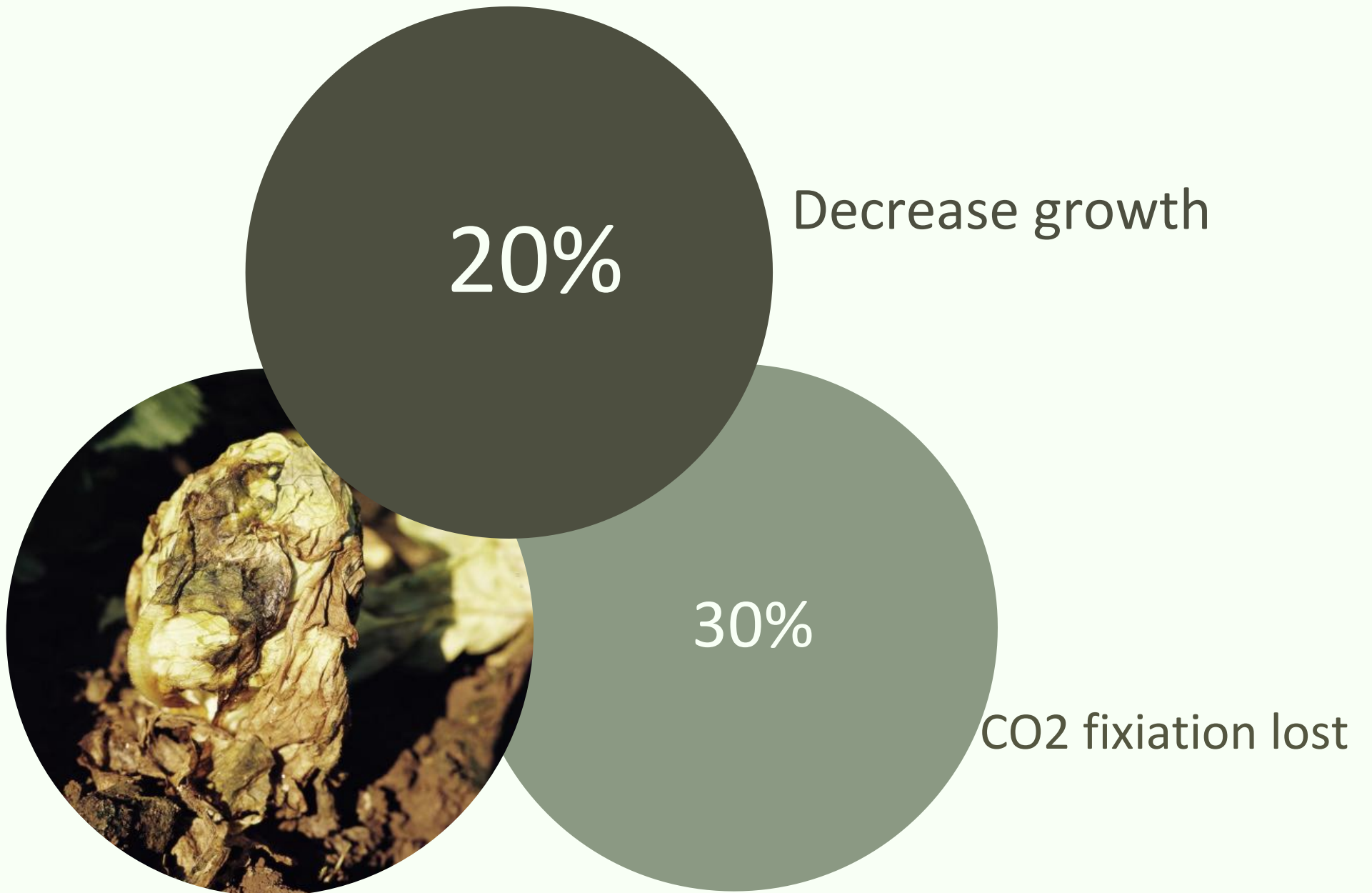
Good luck!

Smart Hacketon: VanRaes & iLuno 1

Sustainable Project

By Arne Borghgraef, Karst Vereecken, Giel Troubleyn, Samy Bakkouche, Thomas Guily





Ideal Light Composition

Vitamin C

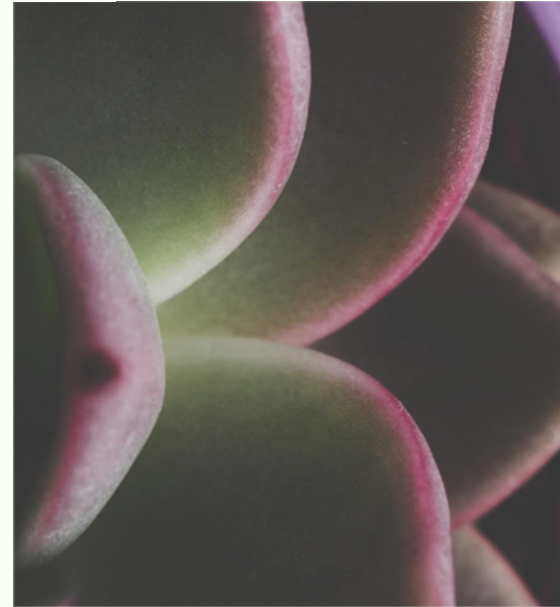
Antioxidants

Water usage

Higher quality

Shorter crop cycle

Proteins & sugar



LED with hermetic fixture

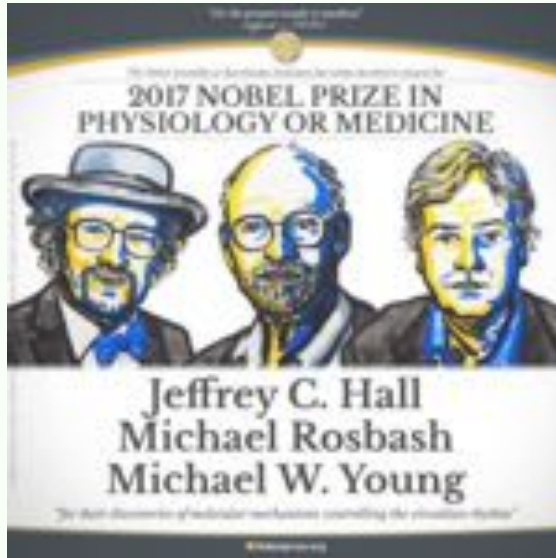
PAR sensor

CPU

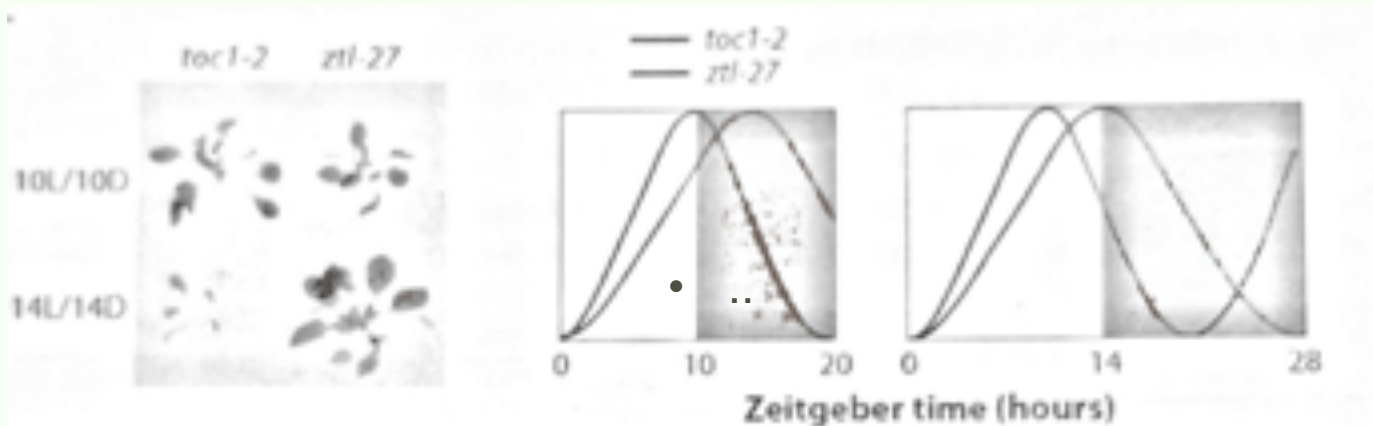
	Fraction Red	Fraction Blue
LED1	0,7	0,3
LED2	0,3	0,7



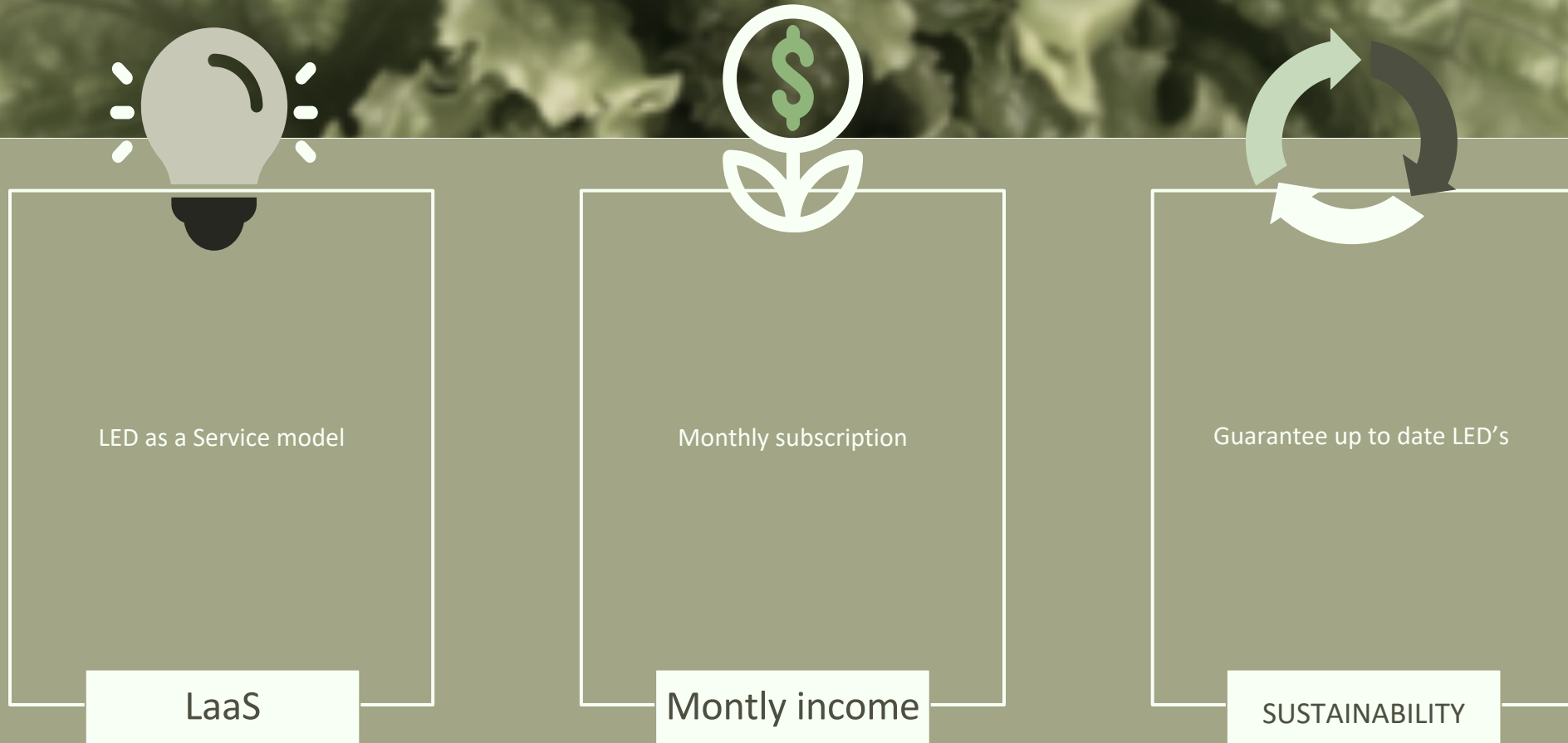
Circadian rhythm <-> day and night cycles



- Better growth
- More CO₂-fixation
- Better water use efficiency



Business model



10.00 1.58 km/h 93 %

Luminosity : 5.0 lx

Daytime Cycle :
18h / 6h

Light Intensity :
220 $\mu\text{mol} / \text{m}^2 / \text{s}$



x 3



x 5



Rossa

1% of the blue LED's energy saved
0% of the red LED's energy saved



For a brighter
future



**Voting time
for the jury**

Asmaä Moutii
Hala Fennouche
Leandro Collier
Manuela Salaris
Marylise van Geel
Olivier-Désiré Muhimpundu
Uriel Kanku Lufuluabu

JO lander





60%

of accidents occurs
during the landing phase



80%

of accidents are due
to human error





<https://giveeyestoyourplane.com>

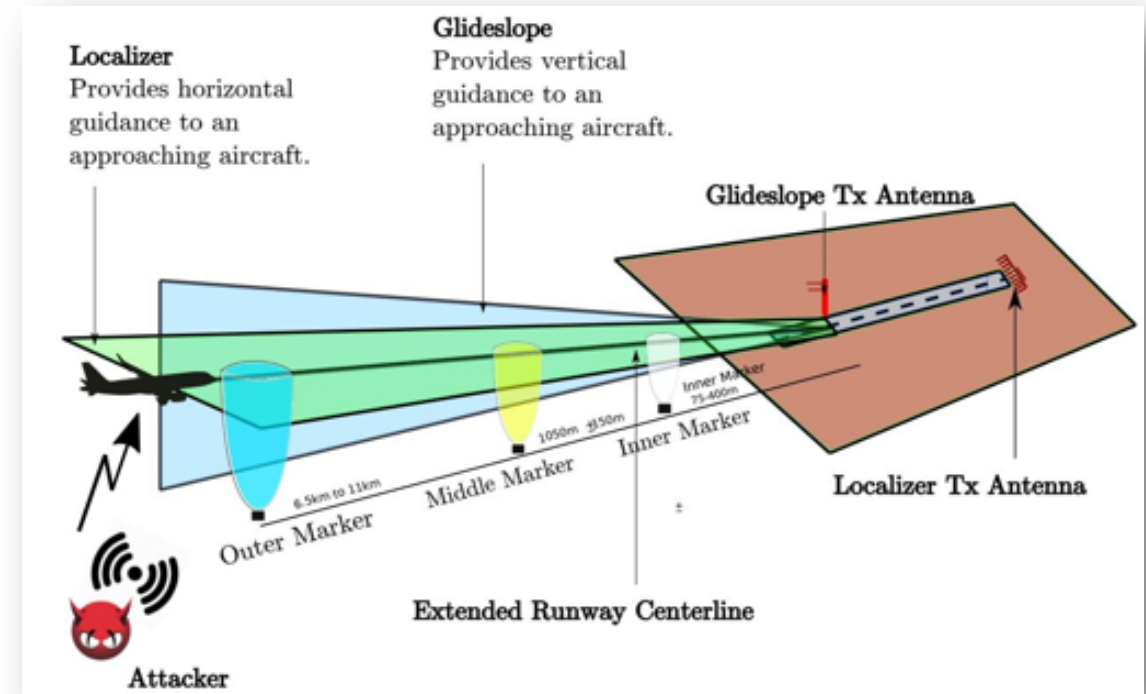




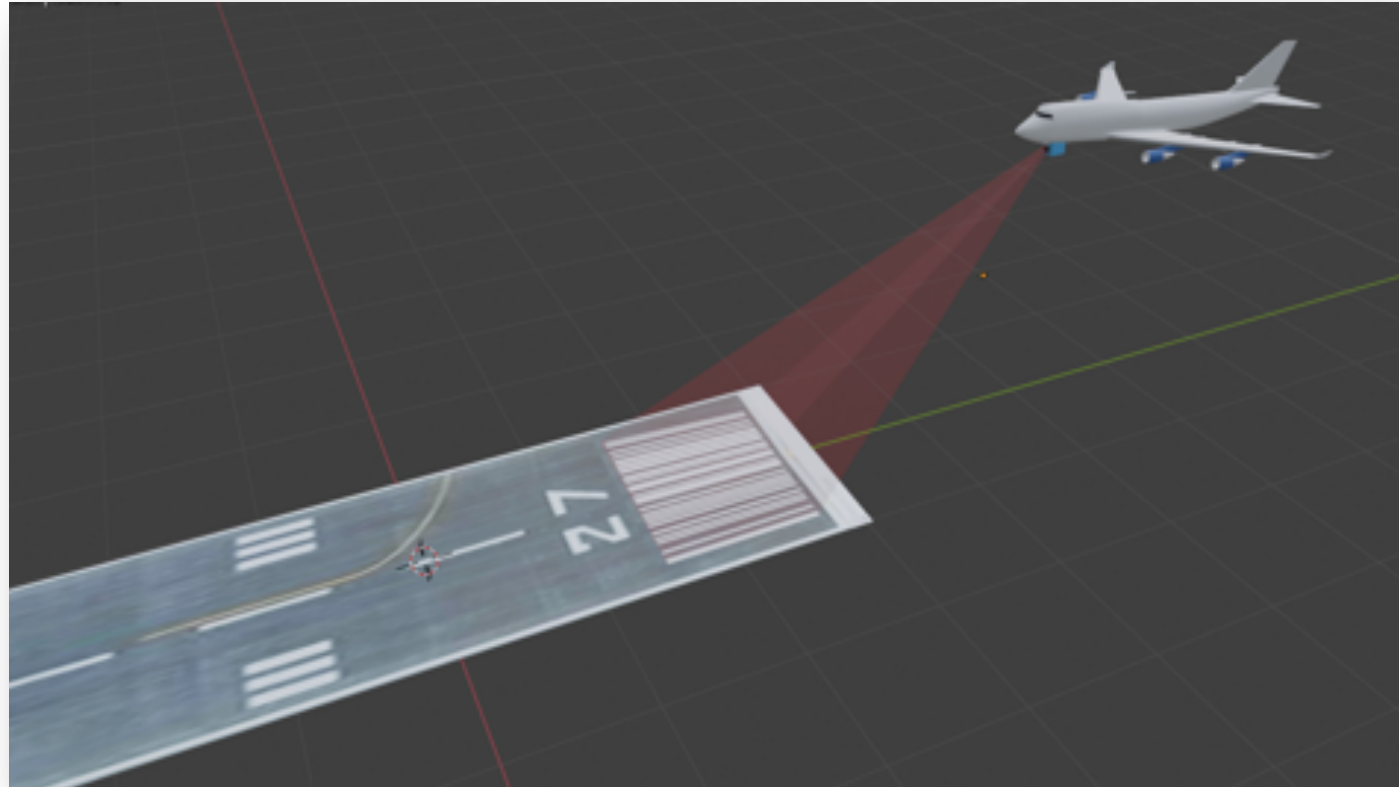
1. GPS coordinates + Embedded system using AI model & infrared cameras to detect landing runway



2. Sensors to compute the approach angle



3. Laser system embedded to check the landing runway



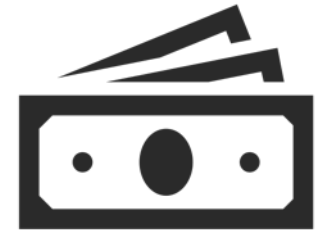




Certified technology
Safety and reliability



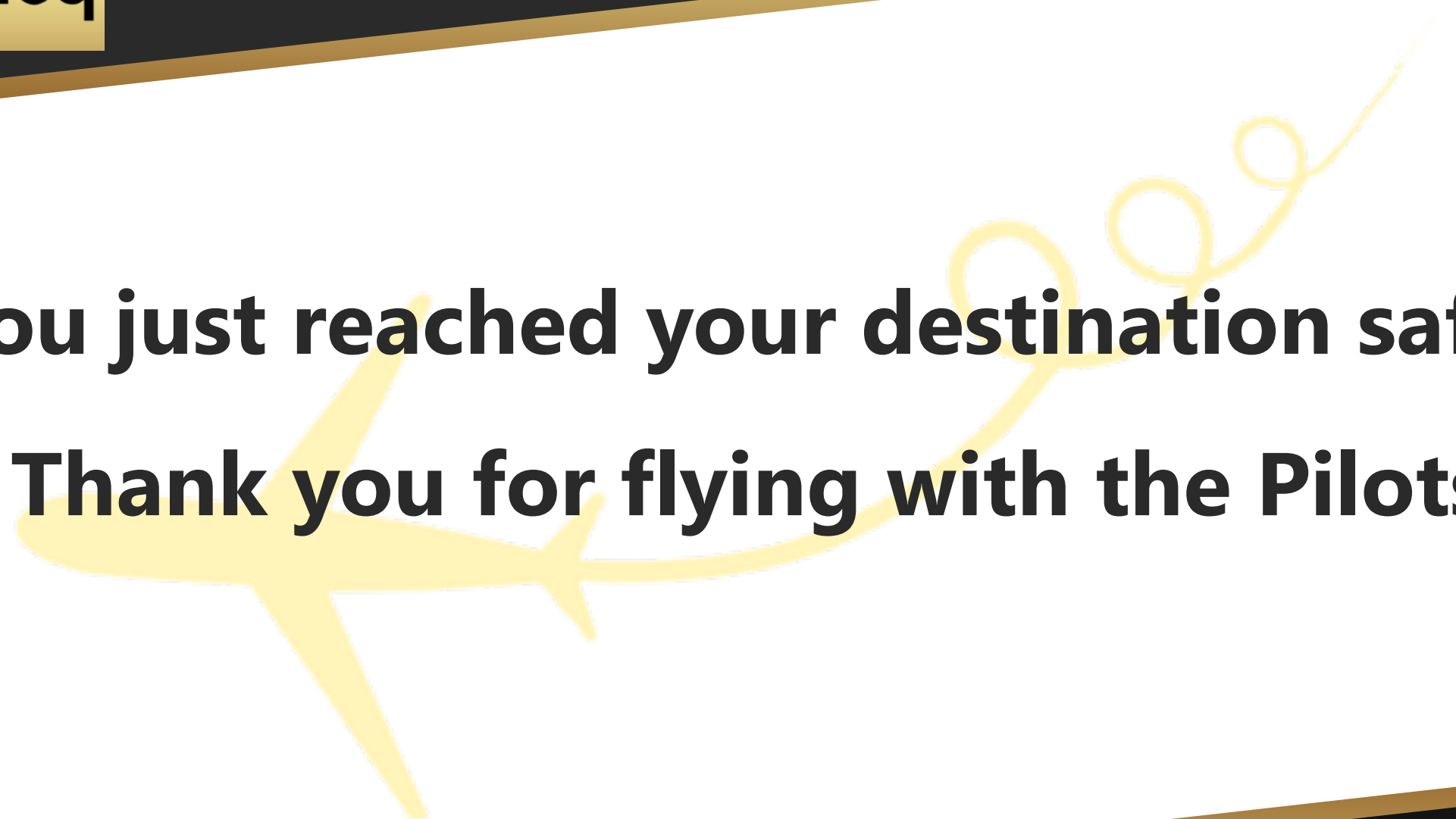
Proposition of a repair
service



Low production cost



**You just reached your destination safely.
Thank you for flying with the Pilots!**





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**Voting time
for the jury**

Smart Hackathon 2021

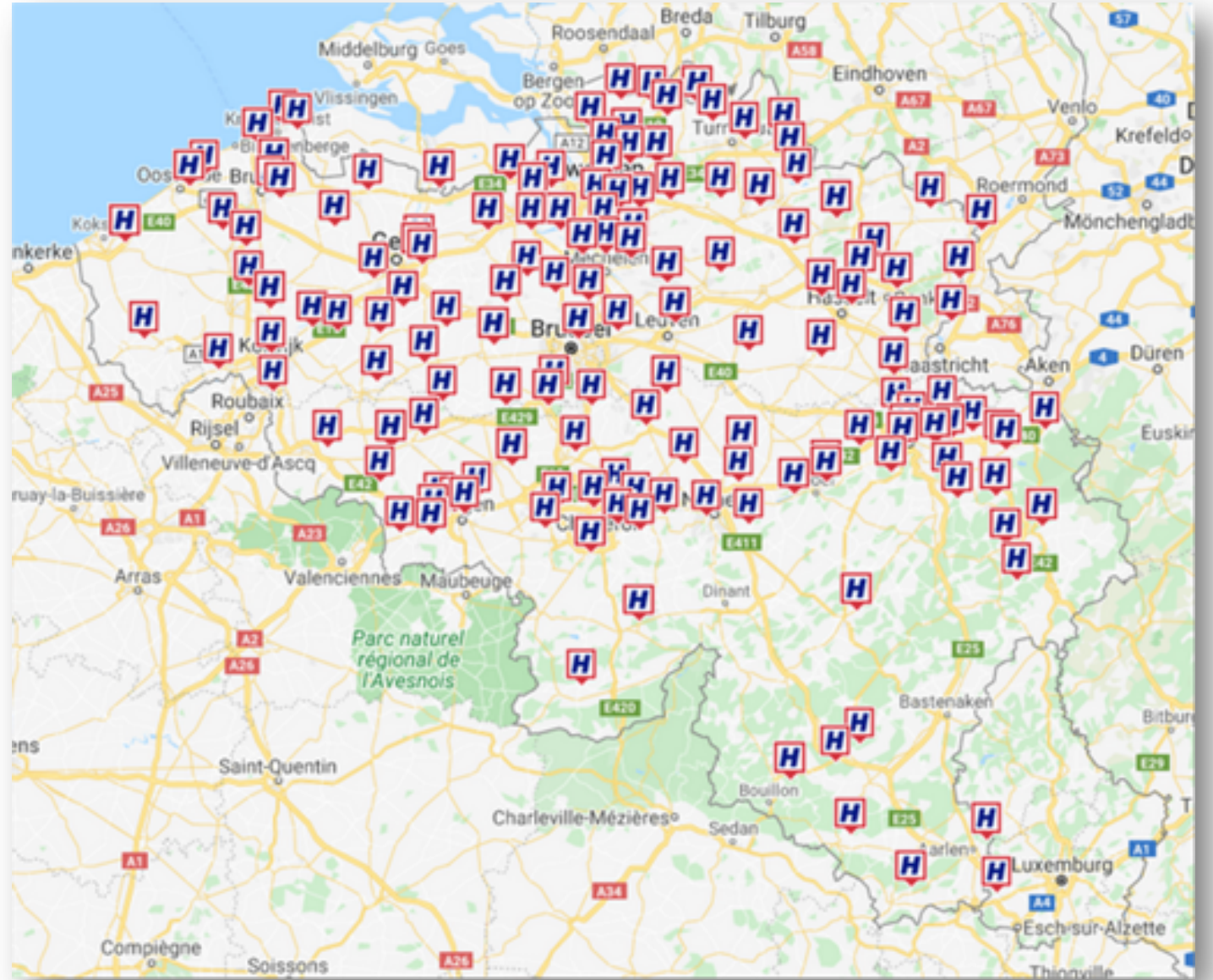
Team Hubo

De Bruyn Maxime – Duboquet Florent - G  r  mie Fran  ois – Ngyadisa
Kabundi Henock – Omez Jean-Maxime – Przysiuda Arnaud



What is the scoop ?

- 100% Belgian and market leader in DIY in Belgium
- 154 stores





Sumi Smart - Shopcontroller

Water

- Fire system => Don't touch !
- Sanitary : Just in the staff room
 - Light ON => Valve opened
 - Alarm ON => Valve closed



Heat Source



Dual control with outdoor and indoor temperature sensor

Heat Loss

Cleaner energy production is nice
BUT no energy consumption is better !

- Structure :
 - Roof and wall insulation
- Gates :
 - Sensors for study it
 - Airlock
 - Small service door



Electricity

- IT and security => Don't touch !
- Lights = 70%
 - Turn off illuminated sign as much as possible
 - Internal lighting according to the external luminosity
=> turn off unnecessary lights
 - Switch of display lamps
 - Lighting department
 - Bathroom department
 - ...
 - Motion sensor for staff room





Good but not enough !

Ambitious objective of 55% of CO₂ emissions cutting by 2030 and carbon neutral in 2050

- **Complete remodelling of the store's structures**
 - Eco-conception
 - Phosphorecent sign
 - Sheving reorganisation
- **Less physical stores and improve e-commerce**



Circular economy
Collect - Repair - Recycle - Rent

Thanks for your
attention !



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**Voting time
for the jury**

Smart Hackathon – Challenge Vanraes Iluno

Team 2 : Houssaini Ziyad
Kuntz Nicolas
Liagre Margot
Tedeschi Quentin





Team



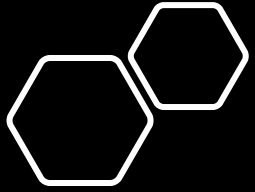
Problematic

- How to get more productivity ?
- How to get more time ?
- How to be less tired ?
- How to have better product ?





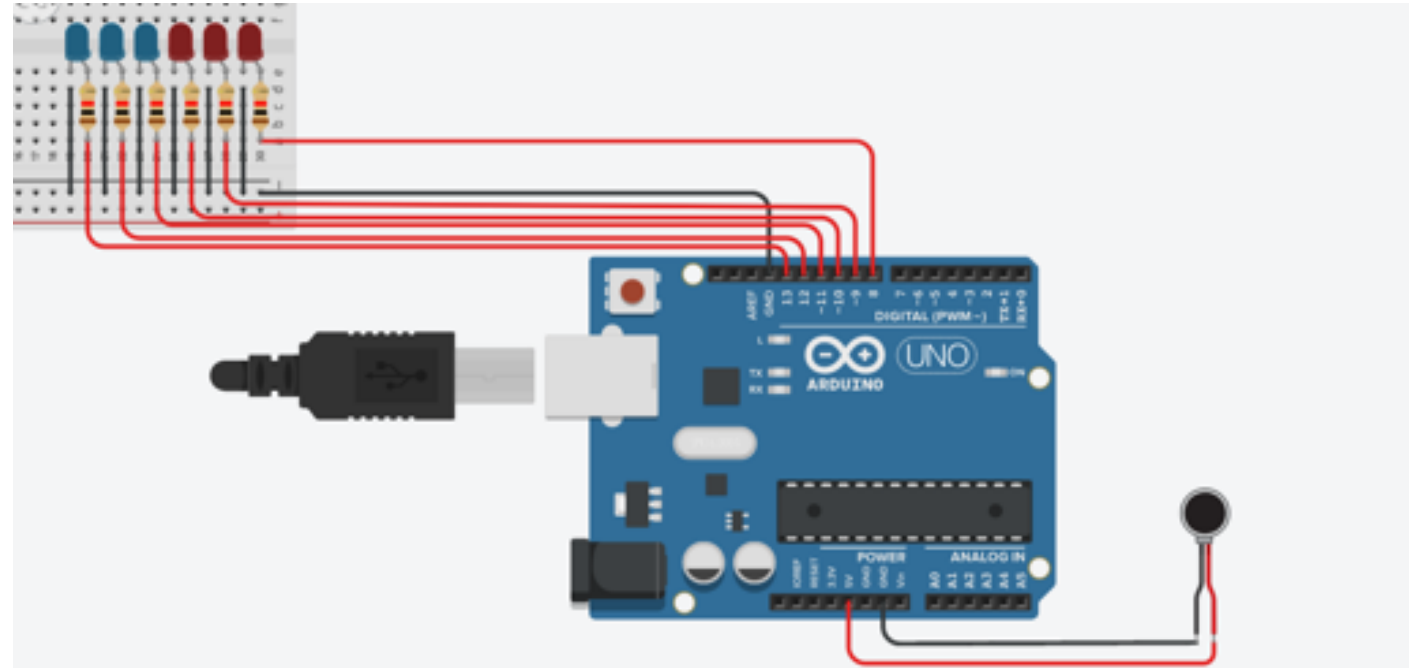
Idea – Challenge Designing



Electronic system

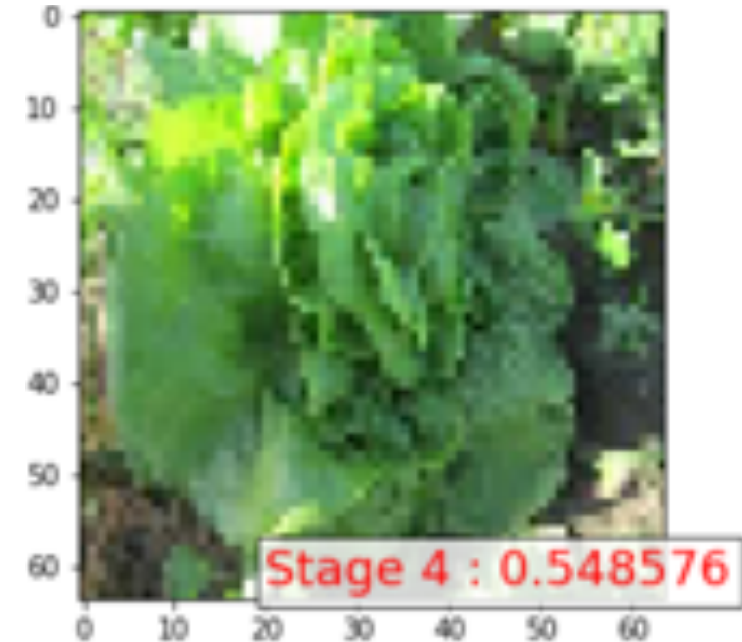
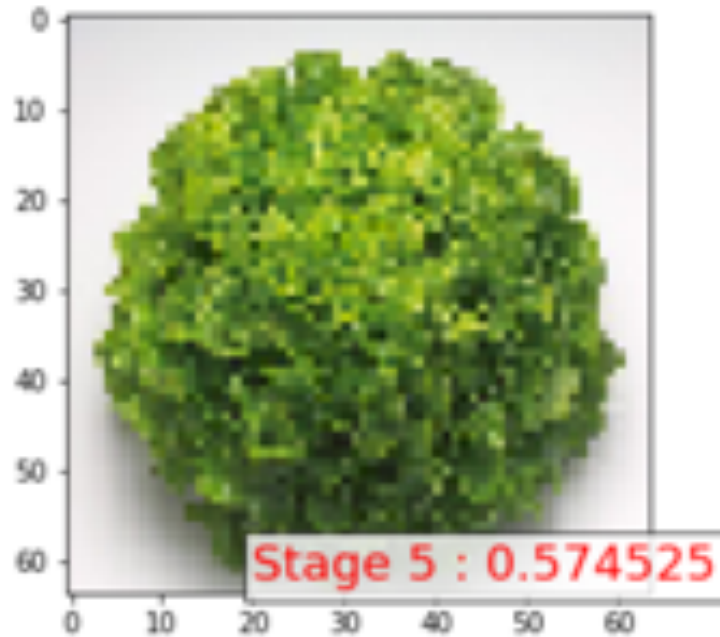
- Camera
- Microcontroller
- LED (Blue and Red)

Smart Hackathon - Vanraes Iluno - Ziyad, Nicolas, Margot et Quentin

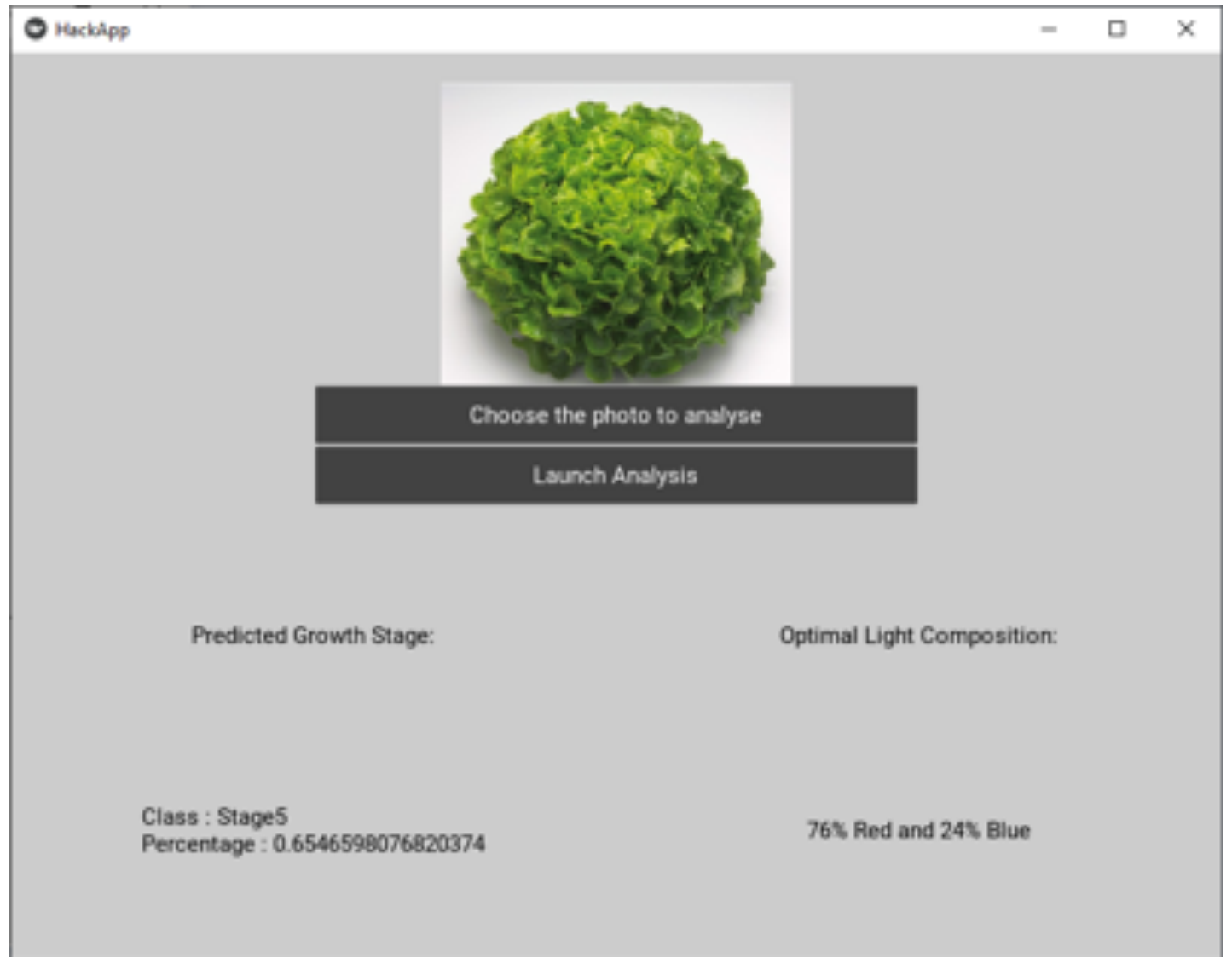


Prediction with IA

- What is the growth stage of the salad in the photo ?
- IA will predict it easily



Industrial control system





Automatic light management

- Lights are being modified in terms of the stage which the plants are situated

Earnings



Happiness



Thank you
for your
attention





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**Voting time
for the jury**

LIBEERT

PRESENTATION

“Creating smiles, since 1923”

WHAT IS LIBEERT ?

HISTORY

100% Belgian
company since
1923

EXPERTISE

Making tasty
chocolate figurines,
bars and filled
chocolate

PRESENCE

Delhaize,
Carrefour, Albert
Heijn, etc.

AND...

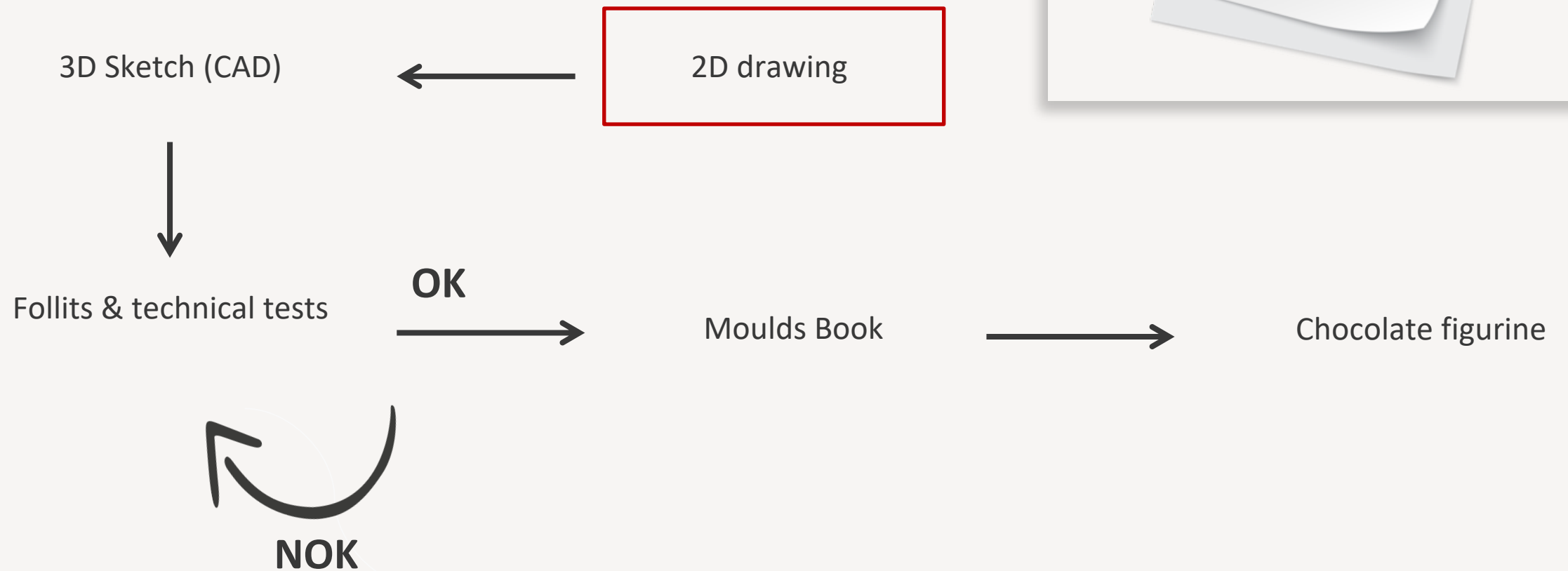
Has a request for
us during this
hackathon



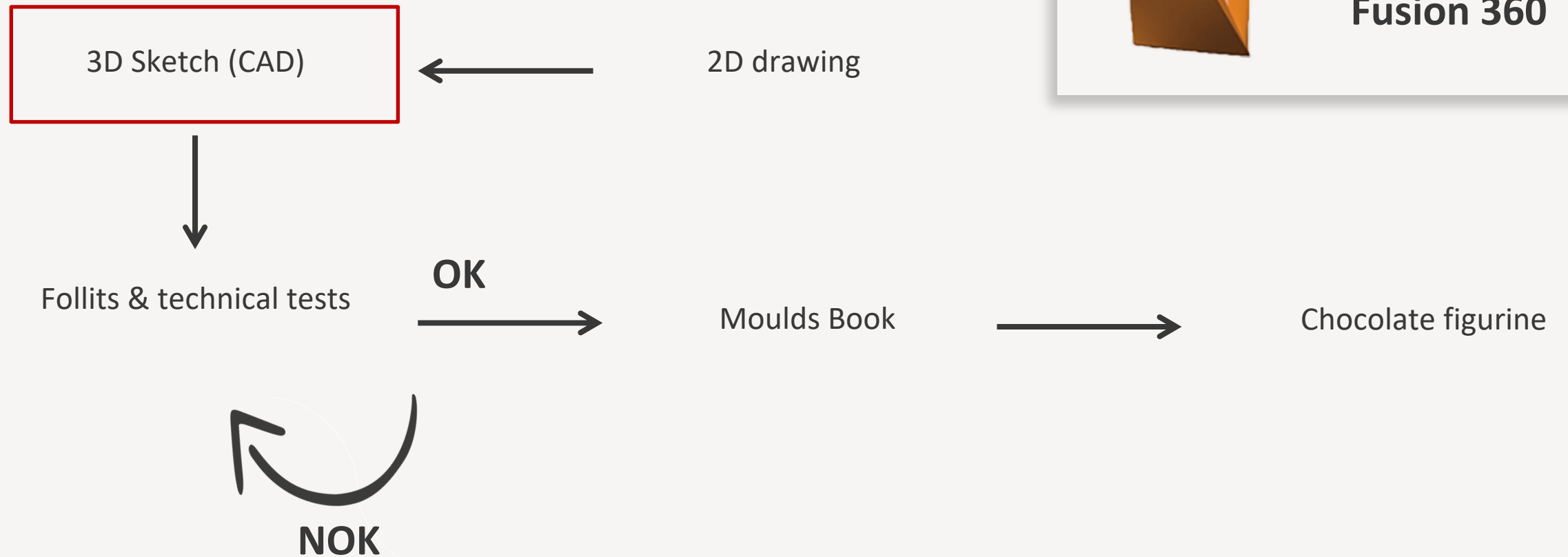
THE STORY OF FRANCOIS...



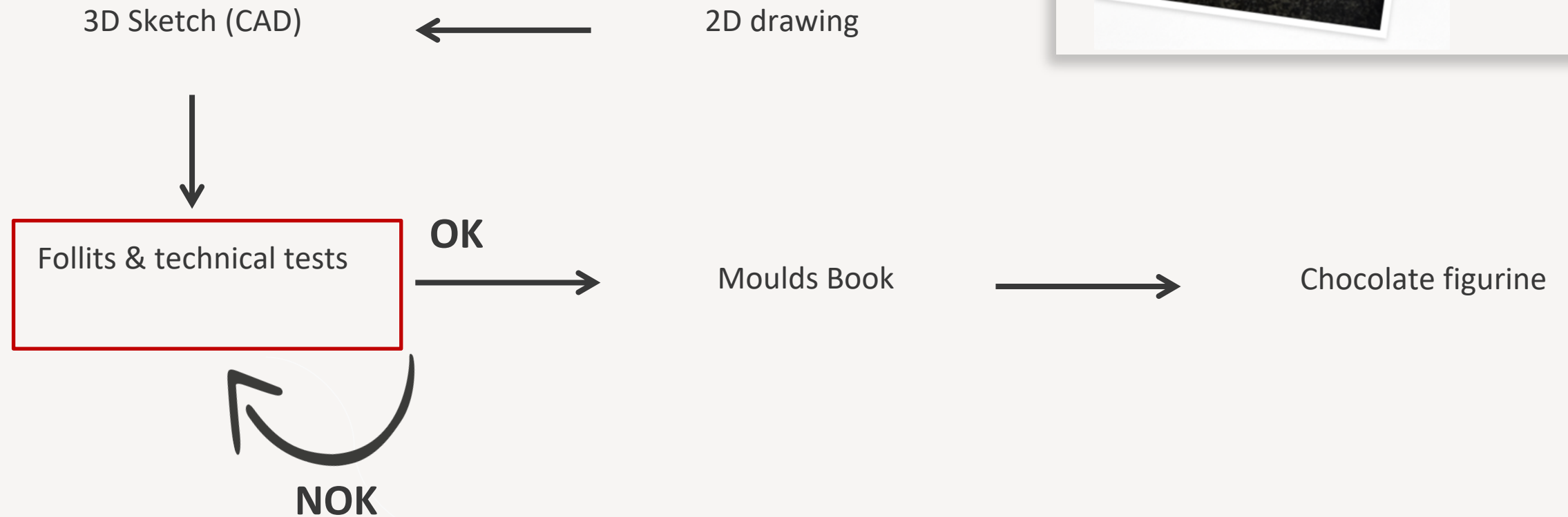
MAKING A MOULDS BOOK – THE PROCESS



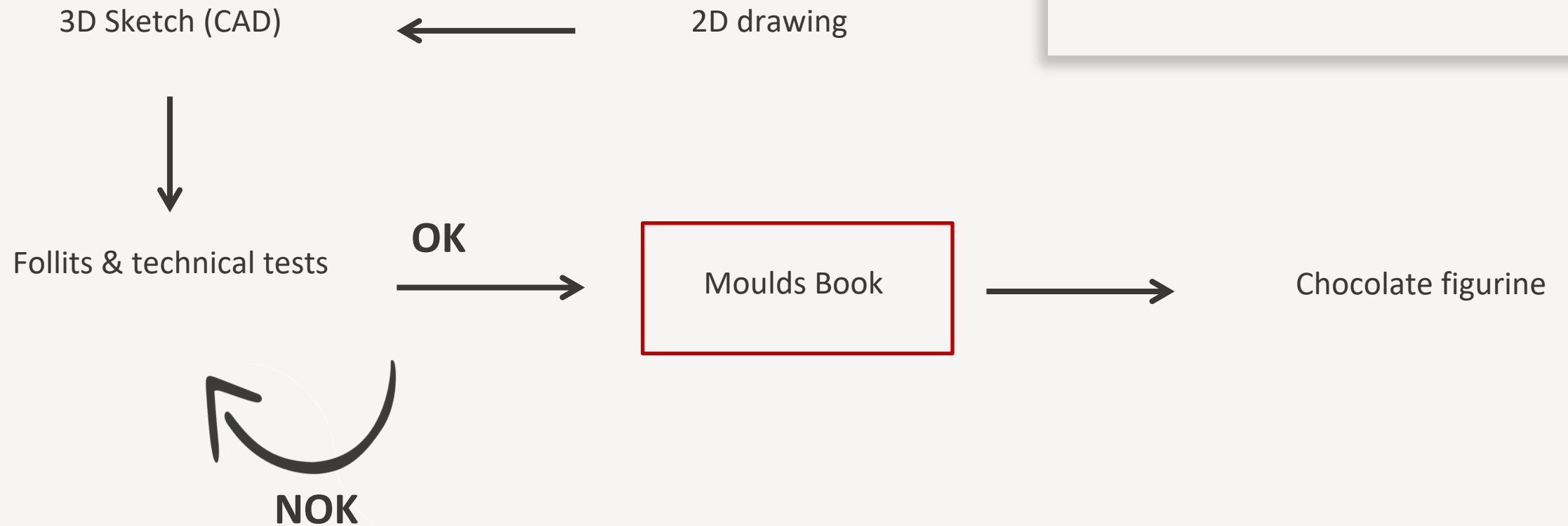
MAKING A MOULDS BOOK – THE PROCESS



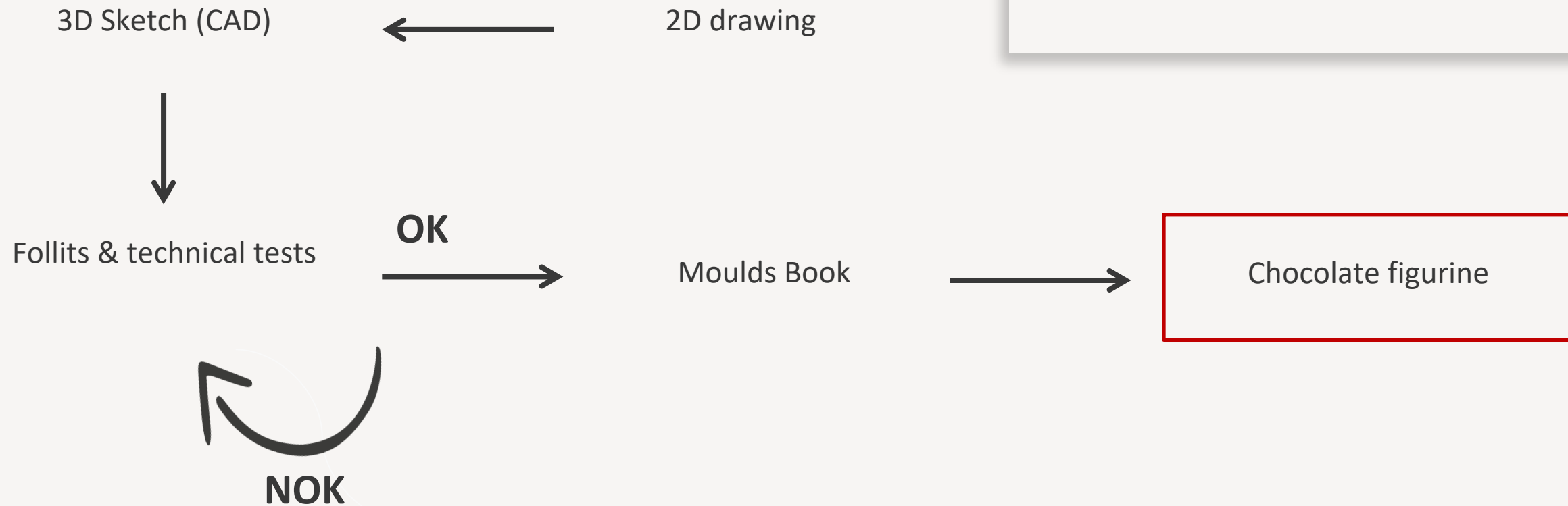
MAKING A MOULDS BOOK – THE PROCESS



MAKING A MOULDS BOOK – THE PROCESS



MAKING A MOULDS BOOK – THE PROCESS



OPTIMIZE THE PROCESS !

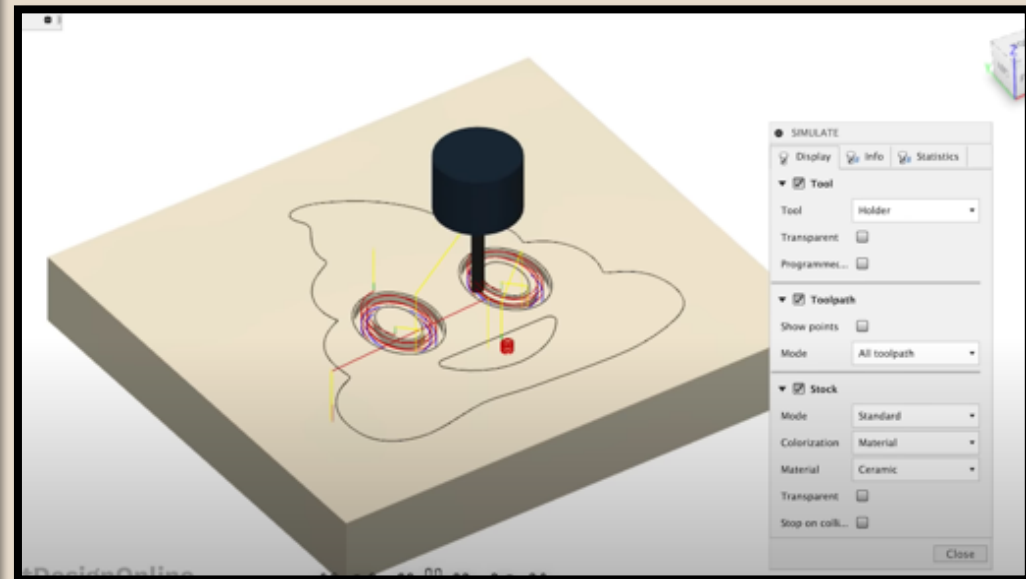
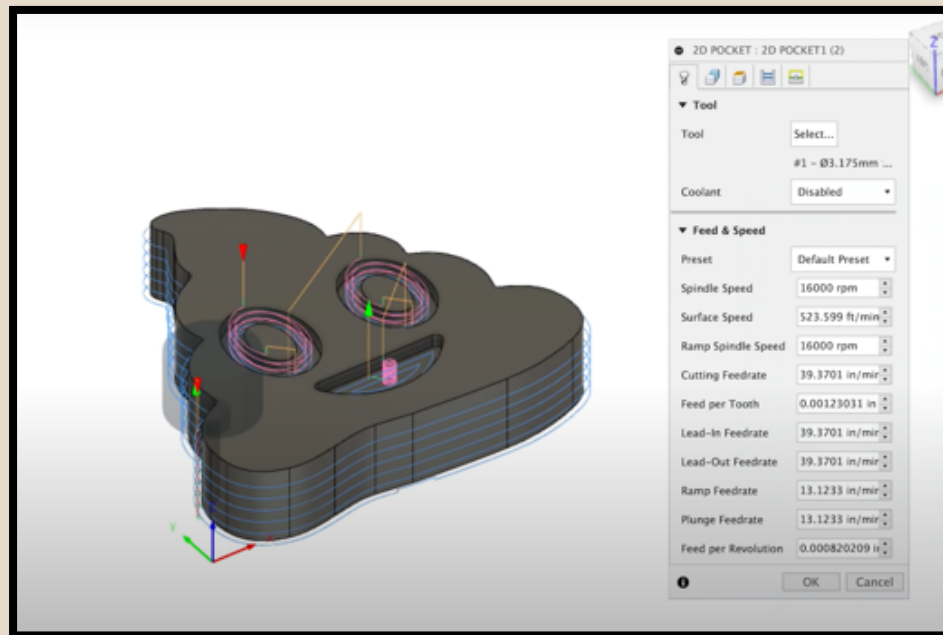
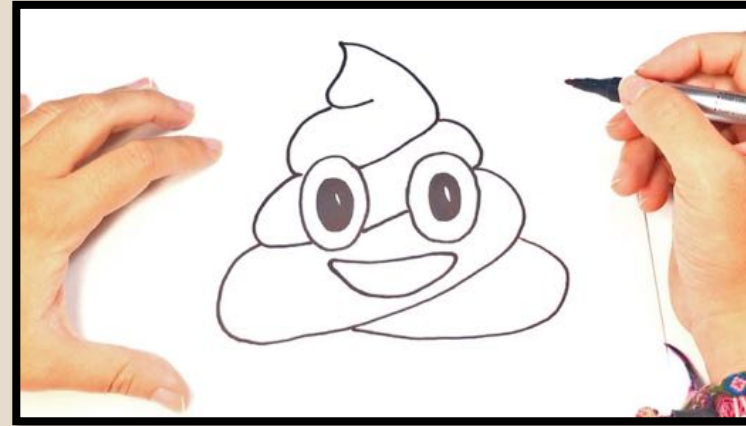
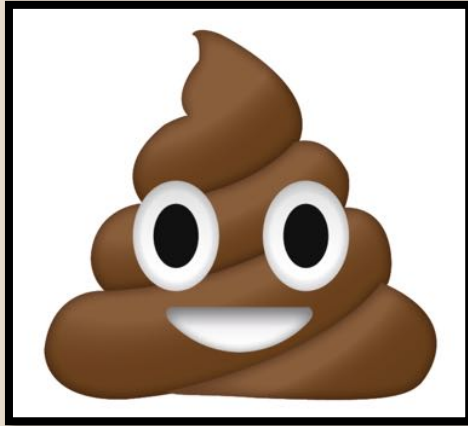
Can last up to **3 months**



IT ALL STARTS
WITH A DRAWING...



...IN A MATTER OF HOURS





VACUUM FORMING MACHINE





VACUUM FORMING MACHINE

NOW THAT IT ONLY LASTS 5 DAYS !

01 — MARKETING
STRATEGY :
CONTEST

02 — FIGURINES
FOLLOWING A
TREND





THANK YOU !

ABDENNOUR BALLALOU

ALICE TONDEUR

CORENTIN SCULTEUR

VALENTIN KOOLEN

ABDERRAHMEN ABDOUN



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**Voting time
for the jury**

MLexis Project



Integrated circuits are everywhere ...



Melexis

ENGINEERING



Client Issues

Productivity decrease



Regular maintenance



Suboptimal repair



Machine Learning & maintenance prediction !



Finding the optimal day for
maintenance

Meeting Client



Objectives



BMC



Team split

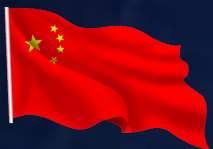
Data Team



Model Team



Need some data

[illegible]

非常感谢欧洲

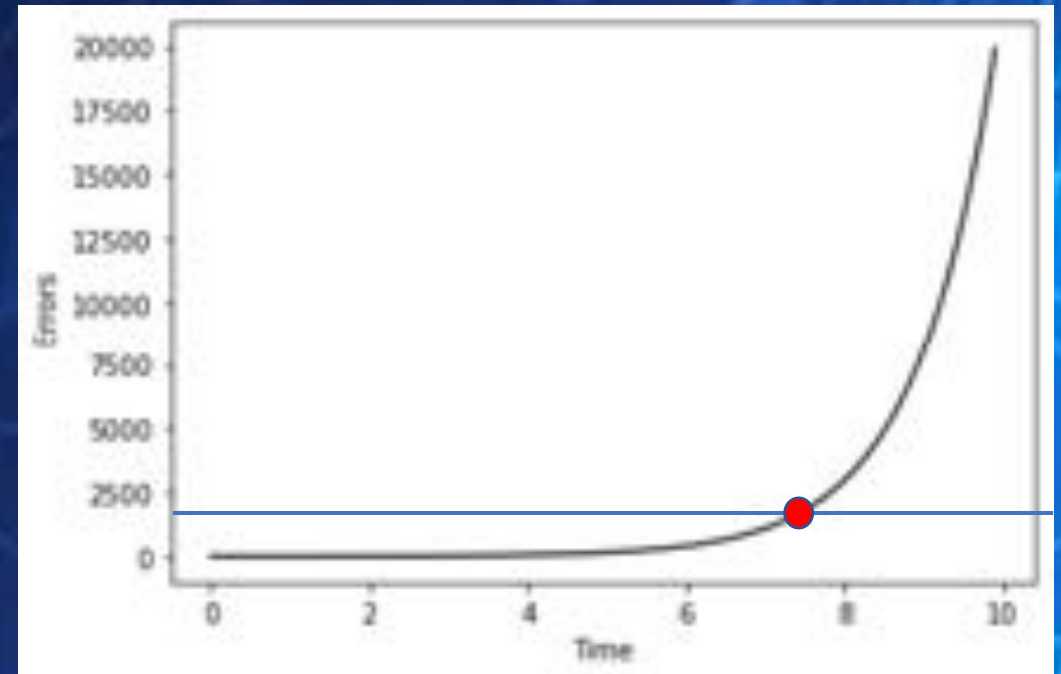
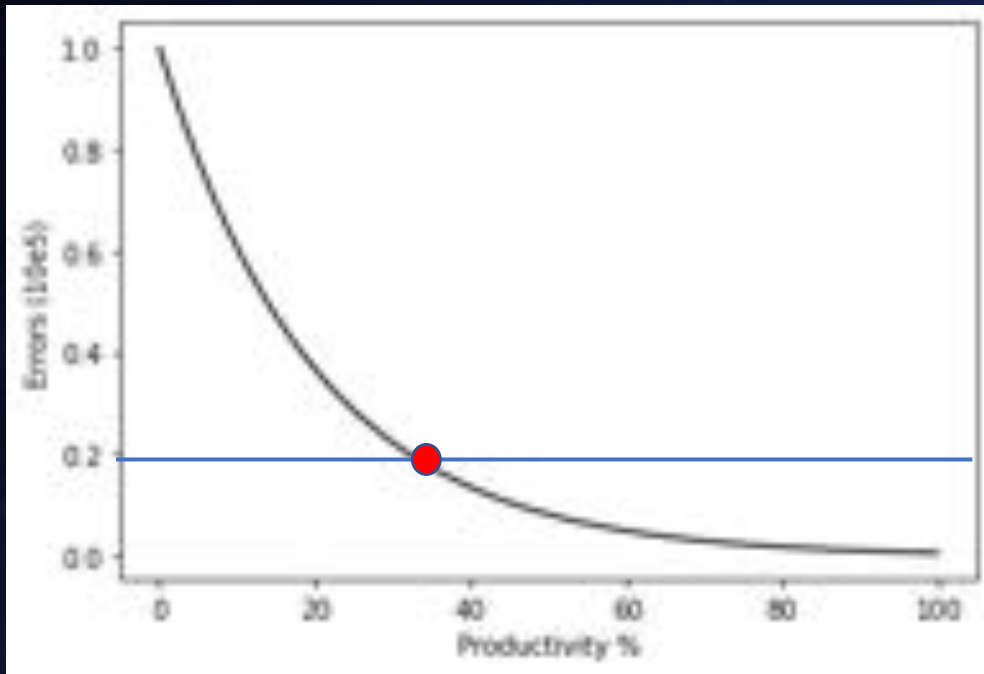


We love Europe !



Selection of variables for our model

Number of errors



Prediction Model (SVR)

Split data

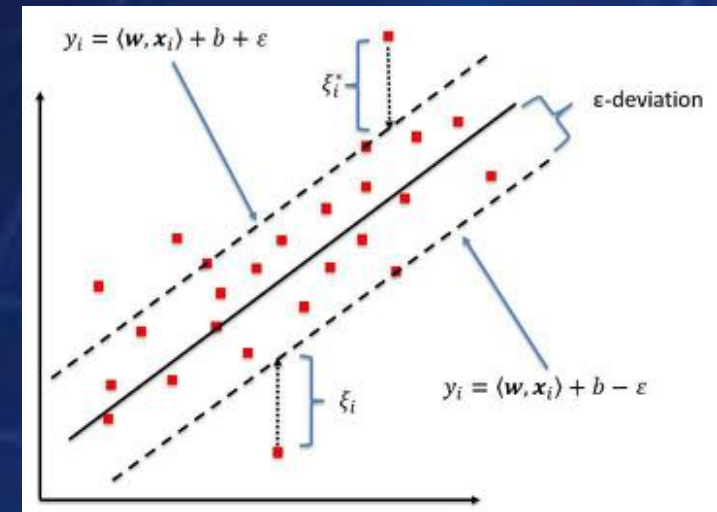
```
X_APPRENTISSAGE, X_VALIDATION, Y_APPRENTISSAGE, Y_VALIDATION = train_test_split(X, y.values.ravel(), test_size = 0.20)
```

- Apprentissage = train_model (80% of the dataset)
- Validation = validation model (20% of the dataset)

SVR model

```
#---- SVR ----  
algorithm = SVR(epsilon=0.10, kernel='rbf')  
algorithm.fit(X_APPRENTISSAGE, Y_APPRENTISSAGE.ravel())  
  
predictions = algorithm.predict(X_VALIDATION)  
  
precision = mean_squared_error(Y_VALIDATION, predictions)
```

- SVR = Support Vector Regression
- Implement with sklearn
- Epsilon = specifies the epsilon-tube within which no penalty is associated in the training loss function



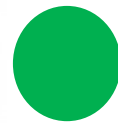


Welcome to Melexis' ERP

Dashboard



Machine's name	Status	Last Maintenance	More details
Unit 1		2021-03-05	
Unit 2		2021-02-23	
Unit 3		2021-01-17	
Unit 4		2021-01-24	
Unit 5		2021-03-03	
Unit 6		2021-02-25	
Unit 7		2021-01-29	
Unit 8		2021-03-06	
Unit 9		2021-03-01	
Unit 10		2021-02-02	



Active

Name : Unit 1

Actual productivity : 70%

Time before next maintenance : 10 days

Problem's type : Overheating

Estimated time for maintenance : 1h

Mars, 2021						
Su	Mo	Tu	We	Th	Fr	Sa
26	27	28	29	30	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

What's next ?



Other models



Deep data analysis



Fast and efficient



Rewarding



Reduced time



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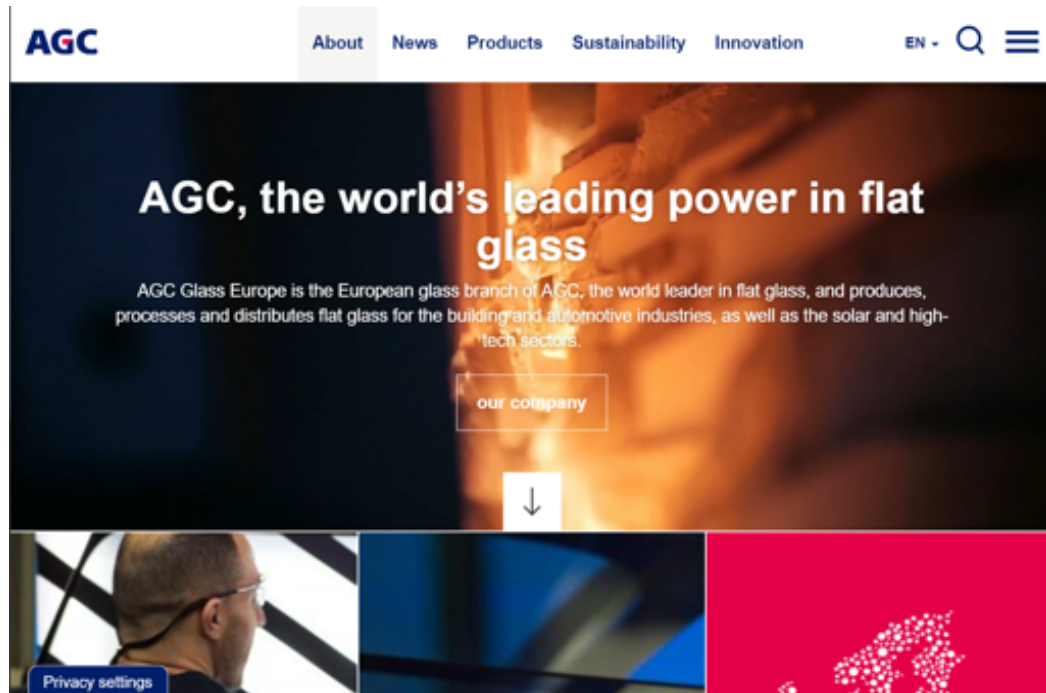
**Voting time
for the jury**

Developing the AGC end user glass buying experience

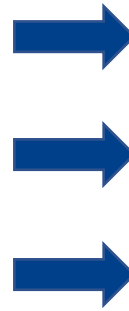
Helan AMIN HOUSSEN - Pauline GODEFROID – Céliane JENNEBAUFFE –
Florian MALAISE – Dorian VANDENTHOREN

AGC

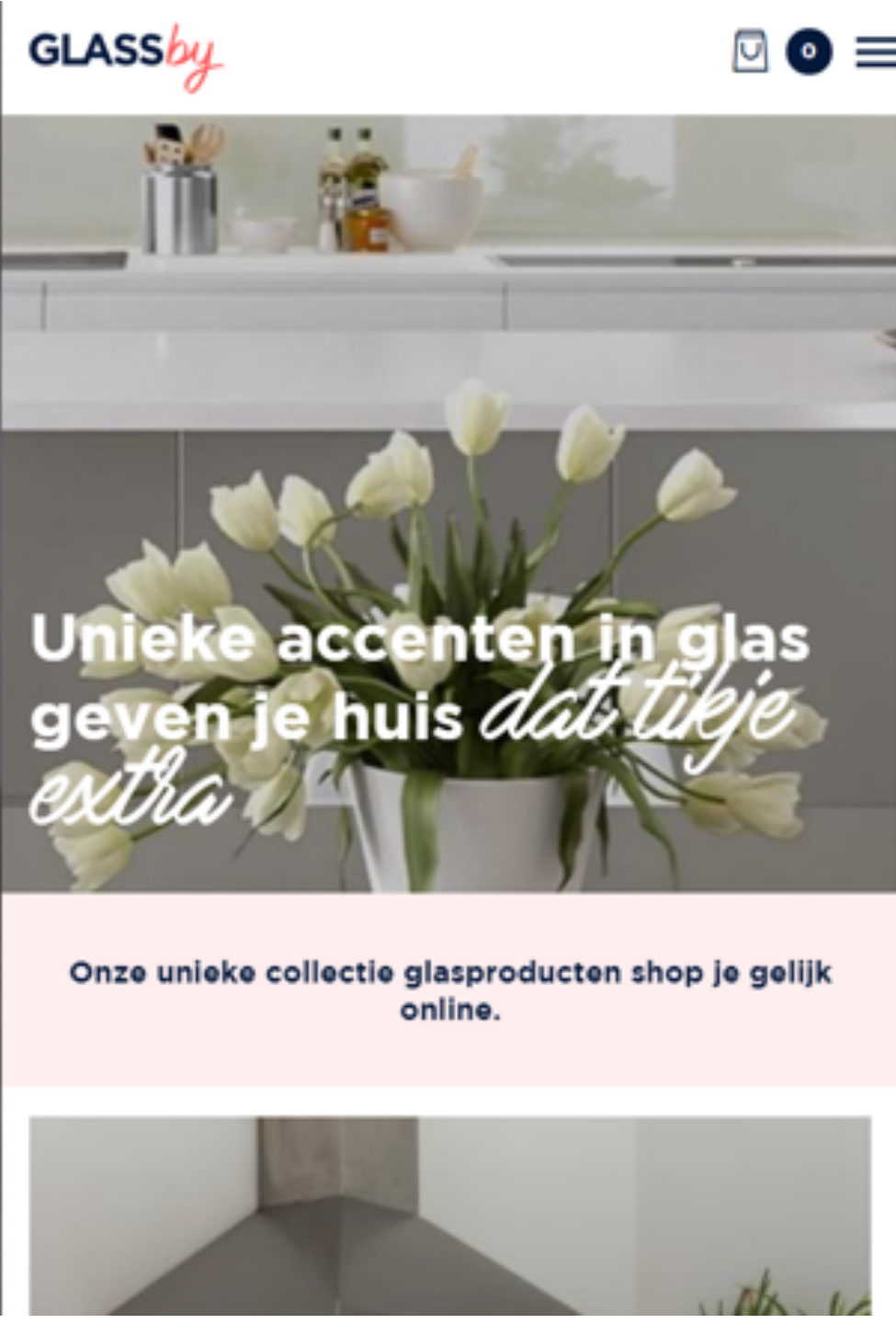
The Goal ?



B to B



B to C



Not Working, Why ?

- Low Brand Awareness
- No Referencing
- Not clear enough, what is the site used for ?
- Why are there 3 separated websites? (*Glassby, agc-store.com, Renowindow.be*)
- Bad user experience in terms of glass configuration

Business Model Canvas



Brand Awareness ! "Even with the best website in the world, if nobody comes on it, it won't work"

Partnerships
DIY retailers



General
Public Show

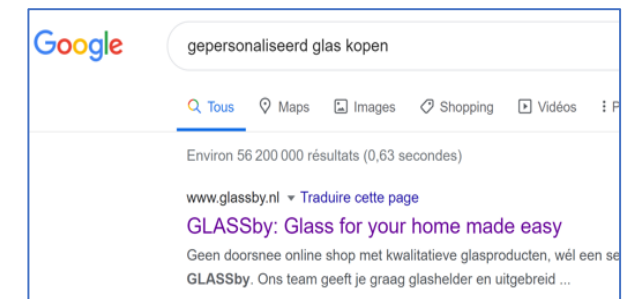


SEO Optimization

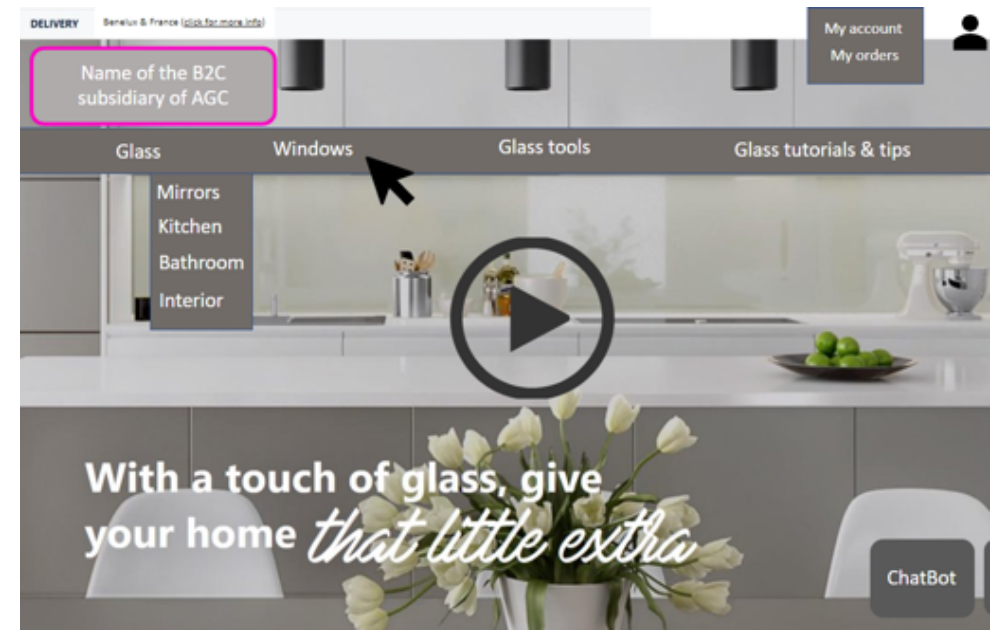
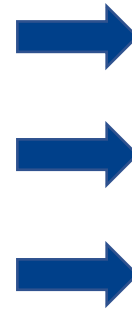
Mots clés
gepersonaliseerd glas kopen

Résultat de votre test

Moteur de recherche	Url	Mots clés	Résultat
google.fr (Web)	glassby.nl/	gepersonaliseerd glas kopen	>100



Three websites? No, One website!



AGC

Glass Configuration => Bad user experience => No purchase !

Easy to use glass configurator + Tips

Épaisseur: 4

Film: Avec film de sécurité

Forme: Rectangle / carré

A (mm): 200

B (mm): 200

Vue de face

Pour d'autres formes non présentes dans le menu "Forme", demandez un devis ici

Restrictions :

200 < A < 500 (mm)

200 < B < 1200 (mm)

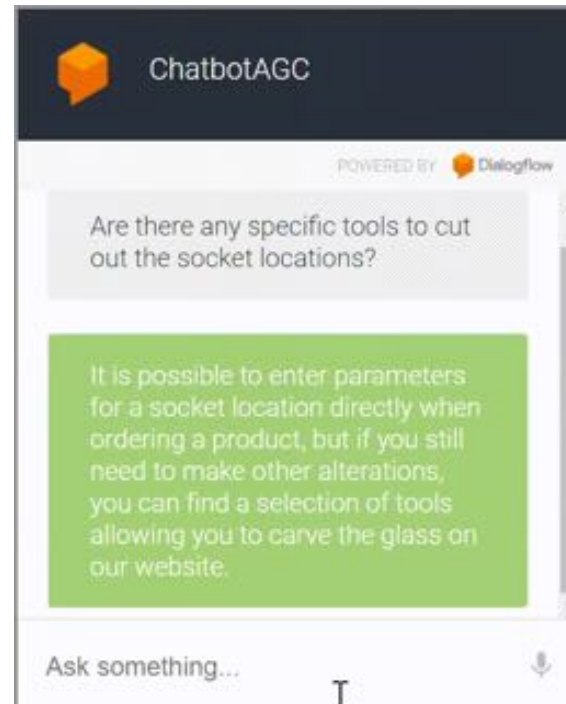
> Ajouter des coins arrondis

Vue face extérieure du verre

0 mm 0 mm 0 mm 0 mm

Pour configurer chaque coin, indiquez dans la case blanche le rayon schématisé par les cercles

AI Powered Chatbot



Augmented Reality Product Visualization



Product Visualization
AR Measurements
In App purchase

Improved User Experience
Recommendation based
on the user's home
"Try Before buying"



AGC
Augmented reality



All-in-One Augmented Reality System

The only system that provides complete infrastructure to create, manage, test, and publish your Augmented Reality applications.



VIEWAR SDK™

- ViewAR SDK used to develop the MVP
- Trusted by some of the largest companies
- Professional AR experience
- Driving sales in Retail and Real Estate

 SBB CFF FFS

 Lufthansa Cargo

NOVOMATIC

BANG & OLUFSEN


STEINWAY & SONS

Austrian 

Royal Botania
Belgian outdoor lighting

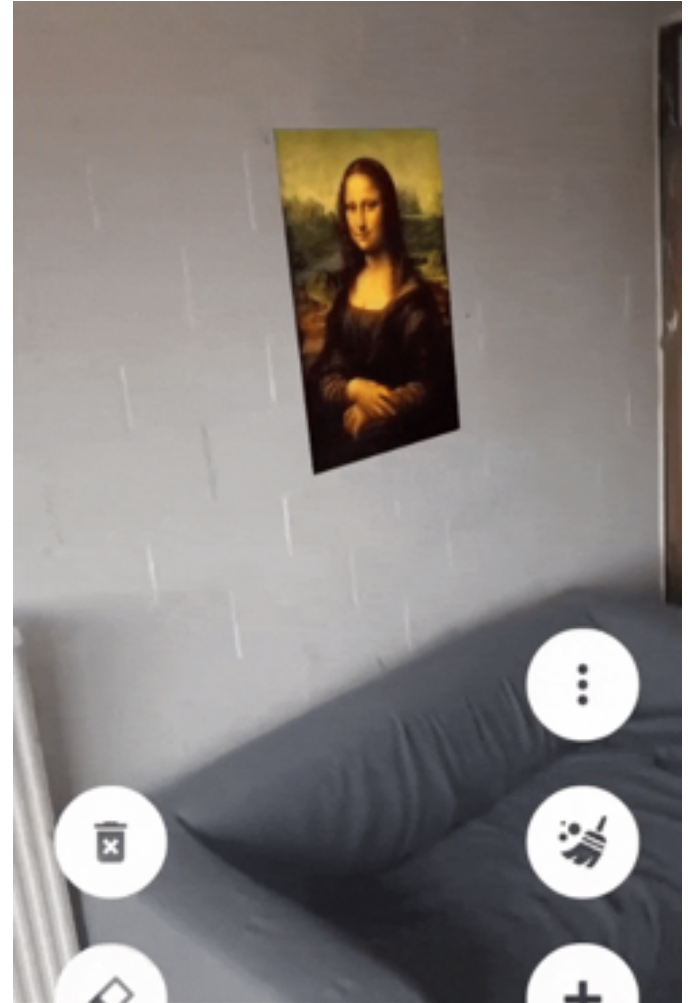
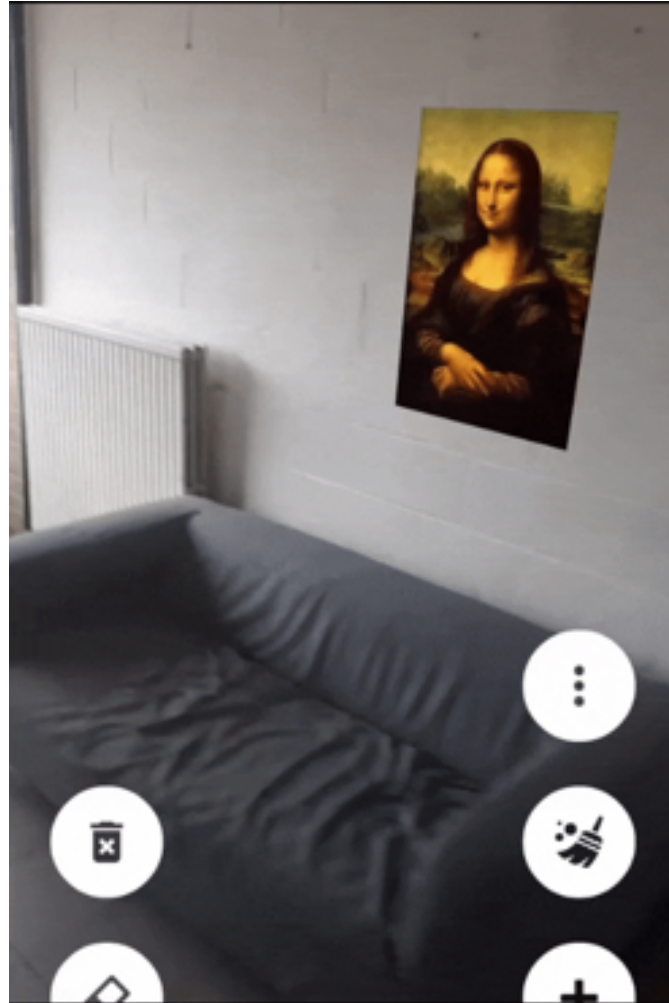
markilux



The Augmented Reality Product Visualization MVP Demo

Thank you for your attention!
Do you have questions? 😊

*If .gif file not working during the presentation :





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**Voting time
for the jury**



Award ceremony

**We are counting
the votes ...**

Award ceremony

And the awards go to...

- Best Prototype Award - AGC Glass Europe
- Sustainability Award - Vanraes / iLuno (1st team)
- Greatest Potential Award - Melexis
- Creativity Award – Libeert
- Best Presentation - ScioTeq
- Technology Award - Vanraes iLuno (2nd team)
- Get Out of The Building Award - Hubo





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