



World leader of AUGMENTED  
PROTECTION IoT platform

- ▷ For existing Personal Protective Equipment (PPE)
- ▷ Designed to save lives & anticipate risks

*THIEREN® is a trademark of Lucie Labs S.A.S*

## PROBLEM : Personal Protective Equipment (PPE) are a must have in our daily lives, but their innovation has stalled...



1938

**3M Scotchlite**

Properties: reflective tape



1969

**Gore-Tex**

Properties: breathability and water protection fabric



1971

**DuPont Kevlar**

Properties: high tenacity and thermally stable fibers.



1983

**Primaloft**

Properties: thermal insulation fibers

# PROBLEM : Smart Technologies are everywhere ... but nowhere in the PPE market

## Autonomous (Smart) car

Tesla Model 3



## Smart TV

LG Smart TV



## Smart Watch

Apple Watch Serie 8



## Smart Speaker

Google Home



## Smart Ring Bell

Ring Video Doorbell



## Smartphone

Samsung Galaxy S22



- ▶ It is a **hassle** for PPE manufacturers and technical textile (chemical) companies to integrate the IoT technology in their existing products. They don't have any experience with technology and its associated deployment in their production lines...
- ▶ They need a **plug and play solution** to digitalize their PPEs
- ...



## OUR SOLUTION

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Thieren's **Augmented Protection IoT platform** (electronics, software & electro-textile fabrics) ready to be integrated into existing Personal Protective Equipment (gloves & garments) to :

- ▶ **Sense** dangerous surroundings
- ▶ **Heat** body parts under harsh weather conditions
- ▶ Make people highly **visible** in any low light conditions

# OUR SOLUTION



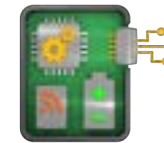
**Thieren Center**  
Software Cloud



**Personal Protective Equipment (PPE)**  
Gloves & Garments



**Thieren Module**  
Electronics / Hardware



**Thieren Connect**  
Software Application  
(iOS/Android)

Reusing mature IoT technologies (electronics & software) from the consumer and automotive markets / \*3 patents already filed



# THE ASSETS OF A MARKET LEADER



▶ **Augmented Protection IoT Platform:** We own and supply the full ecosystem. Mature Software/Electronics and Electro-Textile fabrics ready to be integrated into PPEs (gloves & garments) for brands.



▶ **Credibility:** We produce our electronics & Electro-Textile fabrics. We have shipped >200 000 units since our creation with an efficiency rate >99%



▶ **Quality:** We have learned to be obsessed with quality thanks to our past work with Louis Vuitton. We work with brands on their integration of the Electro-Textile fabrics into their products and we assist them on their production line.



▶ **Next gen electro-textile fabric:** We have partnered with DuPont to bring next generation certified electro-textile fabrics at industrial scale to the market.



# PATENT PORTFOLIO

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## Patents already filed

**INPI Number : FR2110595 - Date : 06/10/2021  
(France)**

Module awakening using the accelerometer sensor

**INPI Number : FR2112722 - Date : 30/11/2021  
(France)**

Synchronization of connected modules

**INPI Number : FR2113715 - Date : 16/12/2021  
(France)**

Configuration and charging of modules



**Our plan is to file for  
3 patents per year on  
average first in  
France and then  
extend them in  
countries where  
Thieren is operating**



## MARKET : SIZE and GROWTH

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**110B \$ by  
2028**

**PPE market  
(Worldwide)**

Total Available Market  
(TAM)

**6B \$ by  
2028**

**Smart PPE market for non  
disposable gloves & garments  
(US, EU, APAC)**

Serviceable Available Market  
(SAM)  
4% of TAM

**120M \$ by  
2028**

**THIEREN revenues**  
Share of Market (MS)  
4% of SAM

Source: Grand View Research



# MARKET : Direction Confirmed By FROST & SULLIVAN

Celebrating 60 years

Contact Frost Store Partner login

FROST & SULLIVAN  
The Growth Pipeline™ Company

INDUSTRY

SOLUTIONS

BLOG

ABOUT



Home > Research > Industry > Chemicals, Materials & Nutrition > Future of Personal Protective Equipment (PPE)

## Future of Personal Protective Equipment (PPE)

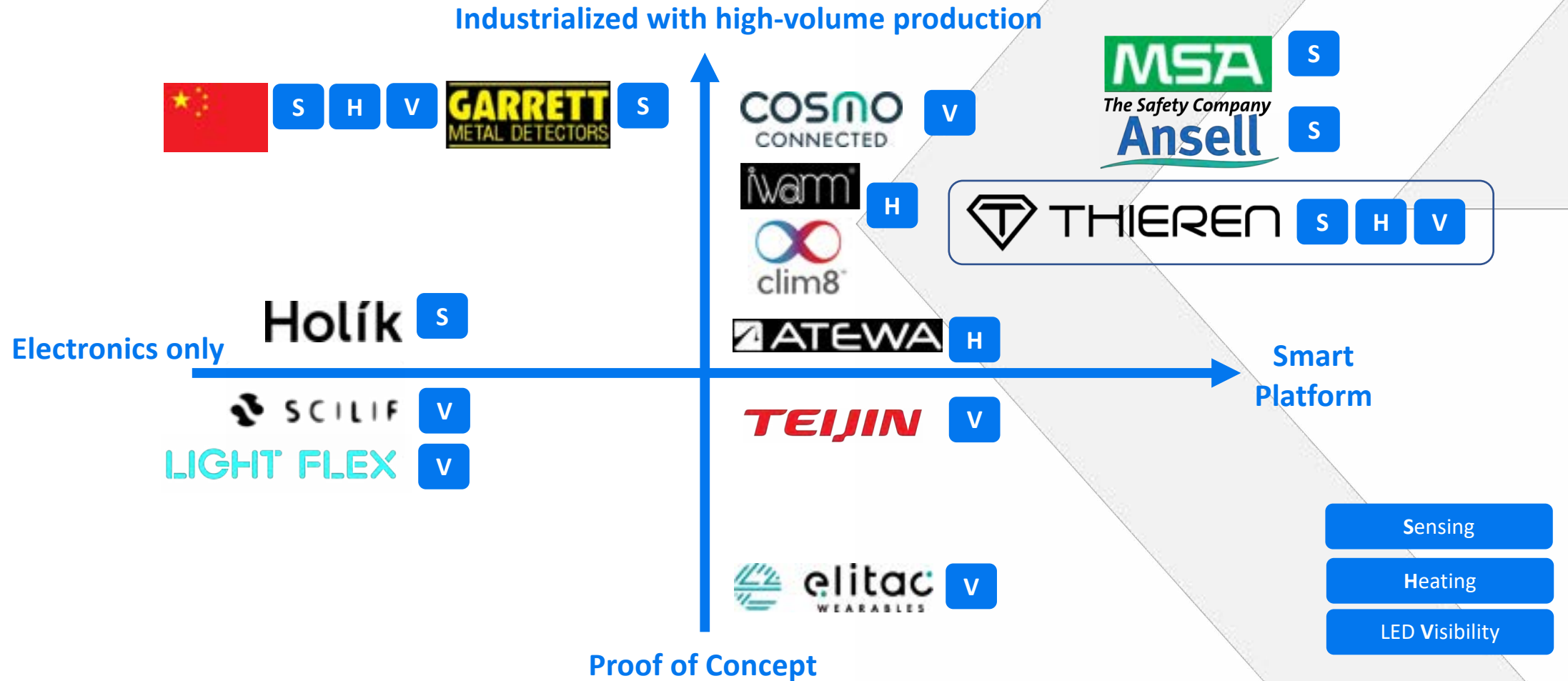
As the PPE industry struggles with pricing pressures and increasing commoditization of products, strategic differentiation of products and services will separate winners from losers in the industry. The competitive landscape for the PPE industry will be very different in 2030, driven by innovation, disruptive business models, and advent of smart and wearable PPE products transforming the workplace to a connected domain enhancing worker safety and productivity.

CONFIDENTIAL

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THIEREN

# COMPETITION



# THIEREN'S COMPETITIVE ADVANTAGES



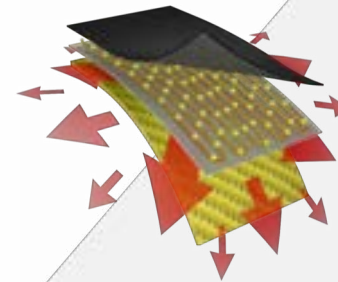
## First to industrialize and to certify

a turn-key Augmented  
Protection IoT Platform for  
existing Personal Protective  
Equipment (PPE)



## Unique partnership with DuPont

to create next generation  
electro-textile fabrics and  
bring them at industrial scale  
on the market



## Unparallel coverage of Electro- Textile fabrics

enabling THIEREN to address a  
wide variety of Personal  
Protective Equipment (PPE)

AI

## Smarter augmented protection

by applying machine  
learning algorithms  
from the data generated  
by the modules

# TIME TO MARKET: Worldwide Deployment

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>Europe</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>7</b>	<b>10</b>	<b>14</b>	<b>19</b>	<b>29</b>	<b>45</b>
France	1	2	3	3	4	4	4	6	8
Germany				2	3	4	4	6	8
UK				2	2	3	4	5	8
Nordics					1	1	2	4	8
Italy						1	2	3	6
Spain						1	2	3	4
Switzerland							1	2	3
<b>North America</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>12</b>	<b>22</b>
US				1	2	3	4	8	16
Canada			1			1	2	4	6
<b>APAC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>6</b>	<b>12</b>	<b>12</b>
Australia						1	2	4	4
South Korea						1	2	4	4
Japan						1	2	4	4
<b>Total Number of Customers</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>8</b>	<b>12</b>	<b>21</b>	<b>31</b>	<b>53</b>	<b>79</b>

Average Revenue per Customer (in M\$)			0,5	0,5	0,7	0,8	1,1	1,3	1,5
Total Thieren Revenues (in M\$)	0,4	0,7	2,0	3,8	8,3	16,9	33,9	69,8	121,8
Grow Rate (in %)		63%	186%	90%	118%	104%	101%	106%	74%

	Countries	#	Targeted markets
Europe	France	2	Motorcycle/cycling
	Germany	2	Industrial Gloves
	UK	2	Industrial Garments
	Nordics	2	Ski/Outdoor
	Italy	2	Industrial Garments
		2	Industrial Gloves
		2	Motorcycle/cycling
	Spain	2	Motorcycle/cycling
		1	Industrial Garments
		1	Industrial Gloves
Switzerland	3	Ski/Outdoor	

	Countries	#	Targeted markets
North America	US	4	Motorcycle/cycling
		4	Ski/Outdoor
		4	Industrial Gloves
		4	Industrial Garments
	Canada	2	Ski/Outdoor
		2	Industrial Gloves
		2	Industrial Garments

	Countries	#	Targeted markets
APAC	Australia	2	Industrial Gloves
		2	Industrial Garments
	Japan	1	Motorcycle/cycling
	South Korea	1	Industrial Gloves
		1	Industrial Garments
		1	Ski/Outdoor

# BUSINESS MODEL : B2B

## Core

### Modules & Electro-Textiles

We sell modules and electro-textiles per unit. The software license is integrated into the unit cost. The average Gross Margin is 40%

+

## Opportunity

### SaaS

We will sell a monthly/yearly subscription fee to access data analytics and configuration of the modules.

+

## Opportunity

### Insurance Subscription

We will sell a monthly/yearly subscription fee to cover for repair or replacement of modules in the event of accidental damage or battery depletion and access to technical support from THIEREN.



Production of Hardware :  
Outsourcing of the production /  
Expenses & CAPEX are kept under control.

Economies of scale (costs decreasing with volumes) + Product's lifetime of 5 years on average (R&D spend under control)

Market practice upfront deposit + no inventory of finished products.



# TRACTION

## France (deals lead by Founders)

Procovès

ROSTAING



- ▶ 1M € purchase orders confirmed by September 2021
- ▶ Awaiting 1M € purchase order (PO) with existing customers in the coming months

## Word Wide (deals lead by Sales & Marketing team)

- ▶ 520 qualified leads (as of today) in Salesforce
- ▶ Expecting first POs\* from new customers in the coming months:
  - Polyco Healthline (UK)
  - MCR Safety (US)
  - TS Safety (China)



- ▶ Average PO size is now at 450k € with a minimum PO at 350k €



## TEAM



**Yan Lee-Dajoux**  
**CEO & Co-founder**  
**Partnerships, Product**

20 years experience in Sales & Marketing in startups and global high-tech corporations (Ericsson and TI).



**François Mazard**  
**CTO & Co-founder**  
**R&D, Operations**

20 years experience in HW design and SW architecture & development at a global high-tech corporation (TI).



**Nicolas Riche**  
**VP Finance**  
**HR, Legal, Finance, Office**

20 years experience as CFO and auditor in leading firms like E&Y



**Didier Argenton**  
**VP Sales & Marketing**  
**Marketing, Sales**

30 years experience at C-level in 5 start-ups and global high-tech corporations (Siemens, QCOM, TI)



# ESG CRITERIA

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## Environmental

- ▶ Repairability of electronics and battery of our solutions
- ▶ Recycling of any elements of our solutions
- ▶ Production of our Modules & Electro-Textile Fabrics based in France-Europe

## Social

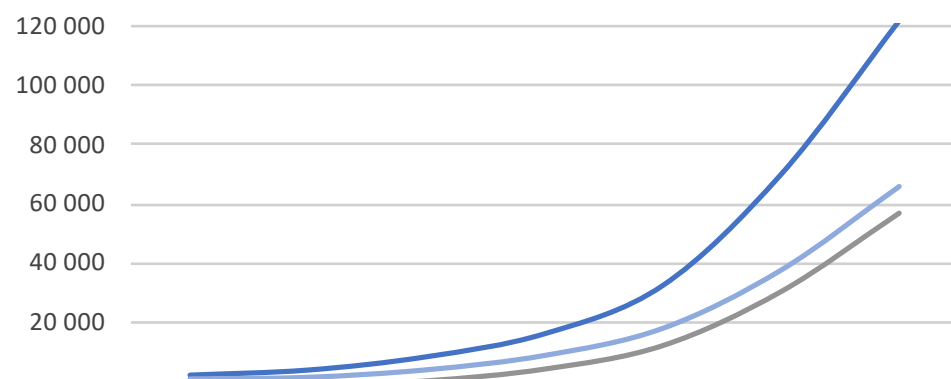
- ▶ Increasing the safety of workers and consumers by integrating our solutions in PPEs
- ▶ Providing equal opportunities inside THIEREN
- ▶ Complete traceability/quality reports of our products to our customers

## Governance

- ▶ President and Managing Director functions are separated
- ▶ Externalized accounting with external yearly audit
- ▶ Company registered in France under French laws. No subsidiaries.
- ▶ Shareholder's protection under the shareholder's agreement. Quarterly strategic investor's meetings. Yearly all investor's meeting.

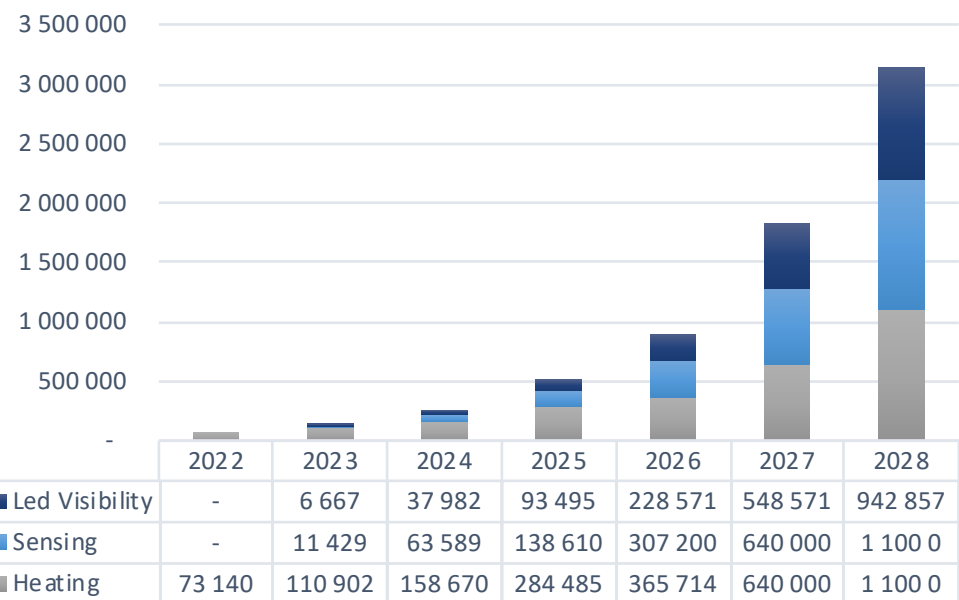


# REVENUES, KEY FIGURES (K\$) & VOLUMES



(20 000)

	2022	2023	2024	2025	2026	2027	2028
— Sales	2 081	3 807	8 287	16 061	32 367	69 881	121 820
— Gross Profit	767	1 324	3 852	8 699	17 862	37 513	65 790
— EBITDA	(582)	(1 737)	102	4 085	12 023	30 243	56 769



	2022	2023	2024	2025	2026	2027	2028
■ Led Visibility	-	6 667	37 982	93 495	228 571	548 571	942 857
■ Sensing	-	11 429	63 589	138 610	307 200	640 000	1 100 000
■ Heating	73 140	110 902	158 670	284 485	365 714	640 000	1 100 000



# P&L

	2022	2023	2024	2025	2026	2027	2028
<b>Total Sales</b>	<b>2 081</b>	<b>3 807</b>	<b>8 287</b>	<b>16 973</b>	<b>33 923</b>	<b>69 881</b>	<b>121 820</b>
Cost of Sales	(1 314)	(2 312)	(4 216)	(8 274)	(16 061)	(32 367)	(56 030)
<b>Gross Profit</b>	<b>767</b>	<b>1 324</b>	<b>3 852</b>	<b>8 699</b>	<b>17 862</b>	<b>37 513</b>	<b>65 790</b>
Margin %	37%	35%	46%	51%	53%	54%	54%
Operations	(156)	(295)	(339)	(439)	(644)	(1 012)	(1 503)
Research & Development	(406)	(665)	(865)	(1 064)	(1 206)	(1 365)	(1 598)
Product	(70)	(247)	(289)	(338)	(450)	(608)	(710)
Sales & Marketing	(59)	(882)	(1 215)	(1 513)	(2 091)	(2 743)	(3 385)
G&A	(657)	(972)	(1 042)	(1 260)	(1 448)	(1 542)	(1 825)
<b>Total Operating Expenses</b>	<b>(1 348)</b>	<b>(3 061)</b>	<b>(3 750)</b>	<b>(4 614)</b>	<b>(5 839)</b>	<b>(7 270)</b>	<b>(9 021)</b>
<b>EBITDA</b>	<b>(582)</b>	<b>(1 737)</b>	<b>102</b>	<b>4 085</b>	<b>12 023</b>	<b>30 243</b>	<b>56 769</b>
<b>Depreciation &amp; Amortization</b>	<b>(29)</b>	<b>(46)</b>	<b>(59)</b>	<b>(73)</b>	<b>(89)</b>	<b>(96)</b>	<b>(95)</b>
<b>EBIT</b>	<b>(610)</b>	<b>(1 782)</b>	<b>43</b>	<b>4 013</b>	<b>11 934</b>	<b>30 148</b>	<b>56 674</b>
Margin %	-29%	-47%	1%	24%	35%	43%	47%
<b>Other Expense/(Income)</b>	<b>103</b>	<b>287</b>	<b>336</b>	<b>383</b>	<b>448</b>	<b>513</b>	<b>584</b>
<b>Net Income</b>	<b>(507)</b>	<b>(1 496)</b>	<b>379</b>	<b>4 396</b>	<b>12 382</b>	<b>30 660</b>	<b>57 258</b>
Margin %	-24%	-39%	5%	26%	37%	44%	47%





# FINANCIAL

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For our Serie A we are looking for **3M €** to :

- ▶ Reach 16M € revenues by 2025
- ▶ Be EBITDA >0 by 2024
- ▶ Be Cash Flow >0 by 2025

We will use the Serie A funding for :

- ▶ The scaling our **Sales & Marketing** efforts in Europe (1), North America (2) and APAC (3)
- ▶ The scaling of our **Back-Office** (Operations & Product Management)
- ▶ The development of new strategic **Partnerships** (3M, Google, etc)

## Cap. Table (2022)

- ▶ Management : 63,85 %
- ▶ Business Angels: 22,21 %
- ▶ Allianz Crowdfunding : 4,13 %
- ▶ VCs : 9,80 %

## Total invested (seed): 1,9M €

- ▶ Love Money: 300k €
- ▶ Crowdfunding Allianz: 500k €
- ▶ RSI/Néo-In/Creazur: 1,1M €

The background of the slide is a photograph of a glacier with large icebergs floating in the water. A large, white, stylized arrow is superimposed on the left side of the image, pointing towards the right. The text is in white, sans-serif font.

LET'S BUILD NOW TOGETHER THE  
PROTECTION OF TOMORROW

THANK YOU

[www.thieren.com](http://www.thieren.com)



## APPENDIX

# FROM LUCIE LABS TO THIEREN

2019	2020	2021	2022
<b>IoT Platform</b> <i>(Digital Transformation of Physical Object)</i>	<b>Smart Textile Platform</b> <i>(Augmented Protection Solutions for PPEs)</i>	<b>Smart Textile Platform</b> <i>(Augmented Protection Solutions for PPEs)</i>	<b>Smart Textile Platform</b> <i>(Augmented Protection Solutions for PPEs)</i>
<b>Markets</b> <ul style="list-style-type: none"> <li>▶ Automotive</li> <li>▶ Textile (Consumer)</li> <li>▶ Luxury</li> </ul> <b>Geographies:</b> <ul style="list-style-type: none"> <li>▶ France</li> </ul>	<b>Markets</b> <ul style="list-style-type: none"> <li>• Textile (Industrial &amp; Consumer)</li> </ul> <b>Geographies</b> <ul style="list-style-type: none"> <li>• France</li> </ul>	<b>Markets</b> <ul style="list-style-type: none"> <li>• Textile (Industrial &amp; Consumer)</li> </ul> <b>Geographies</b> <ul style="list-style-type: none"> <li>• France</li> <li>• North America</li> </ul>	<b>Markets</b> <ul style="list-style-type: none"> <li>• Textile (Industrial &amp; Consumer)</li> </ul> <b>Geographies</b> <ul style="list-style-type: none"> <li>• France</li> <li>• North America</li> <li>• Europe</li> </ul>

200ku produced and sold until 2022



## PARTNERSHIP WITH DUPONT



### INNOVATIVE YARNS & FABRICS

World's largest chemical company. Global leader in protective yarns and fabrics with unparalleled trusted brands and innovation capabilities.

### INNOVATIVE IoT SOLUTIONS

Complete industrialized technological solution included software and electronic.

## NEXT GENERATION OF AUGMENTED PROTECTION SOLUTIONS

**MATURITY**  
**QUALITY**  
**INDUSTRIAL SCALING**

#### Signed Agreements

- ▶ Nomex® & Kevlar® Ingredient Non-Royalty Bearing License Agreement : Ability to use for free the Nomex® and Kevlar® branding
- ▶ Lucie Labs® & DuPont® Joint Development and Secrecy Agreement : for the Heat Sensing Solutions



# HEATING FABRIC FABRIC WITH DUPONT™ KEVLAR®

- ▶ Lightweight & **5 times stronger than steel**
- ▶ **Reliable** in toughest weather conditions
- ▶ **Faster** heating ramp
- ▶ **Full finger** heat surface coverage
- ▶ Fully **personalized** for seamless glove's integration
- ▶ Safety of user ensured by Kevlar® technical properties
- ▶ Nominated for next DuPont Kevlar **Innovation Award**



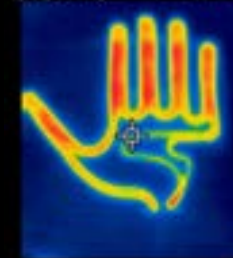
Thermal image taken after 60 sec

27.6 °C ε:0.95



Standard Heating Pad

33.0 °C ε:0.95



Heating Pad  
made with DuPont™ Kevlar®

**Commercialized and industrialized !**  
**First customer: Furygan (consumer market)**  
**Next customer: Procovès (industrial market)**

## HEAT SENSING SOLUTION : INTERSCHUTZ 2022

DuPont, Procovès and THIEREN will unveil the first firefighter's gloves equipped with the first ATEX certified heat sensing solutions based on Nomex<sup>®</sup> fabric from DuPont<sup>®</sup> at the Interschutz trade show (international firefighter trade show, 20<sup>th</sup>-25<sup>th</sup> June 2022, Hannover, Germany)

This solution for firefighters, can prevent burns by sensing the heat. It alerts (vibration) the firefighters of the risk level(s). The solution is completely washable and configurable using THIEREN Center solution (SaaS). Data analytics are available to understand the thermal stress endured by firefighters during each missions.

# HEAT SENSING SOLUTION (PREVENTING BURNS)



Procovès® Firefighter Glove (Nomex® based from DuPont®)

THIEREN Electro-Textile Fabric

THIEREN Module



THIEREN Bay



THIEREN Center

# DEALING WITH THE SHORTAGE OF COMPONENTS

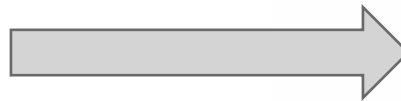
Total EBOM (electronic components + PCB)

Strategic EBOM (critical electronic components = 30% of total EBOM \$ value)

Plan & buy strategic EBOM as soon as available on the market and store

PCB Redesign with new strategic EBOM selection

Buy strategic EBOM at a broker



Bringing back the production of our solutions from China to France/Europe :  
Electro-Textile Fabrics (3 out of 4 done)

♥ Module