

## A new take on lightning protection

When it comes to picking a lightning detection and location system there are many products on the market:

- National systems
- Fixed sensor network
- Hand held detectors

However, among all existing solutions none offer all:

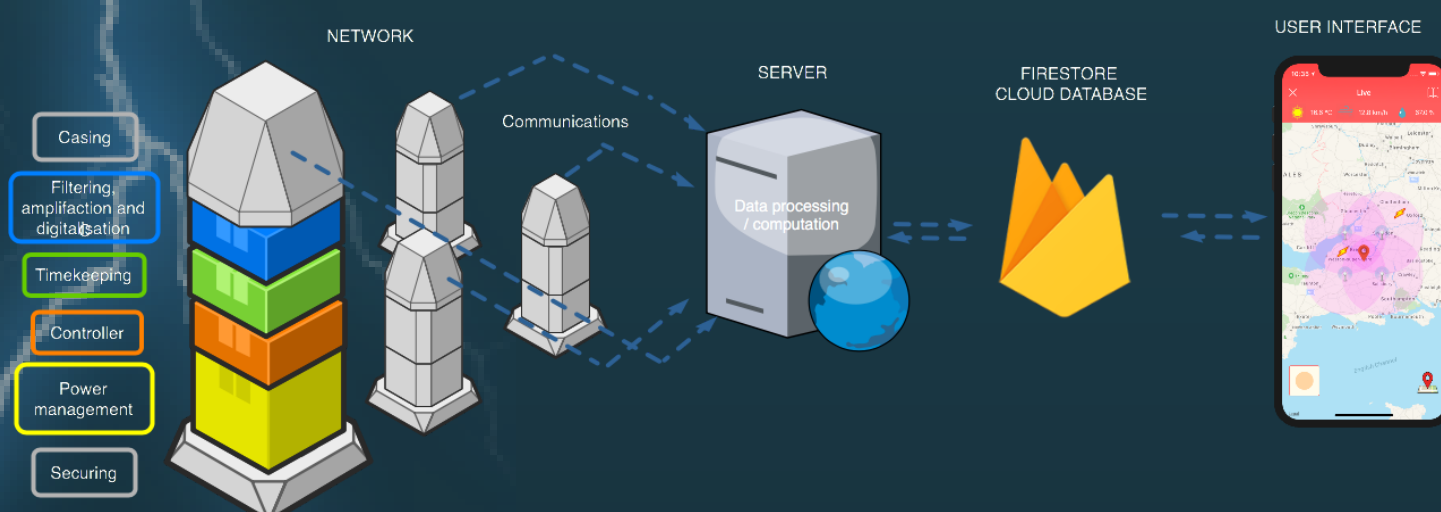
- Portable**
- Medium Range**
- High accuracy**
- User friendly**
- Reasonable price**

Main criteria	Portéclair network	Vaisala dataset GLD360	Vaisala LS7002 sensor network	Biral BTD-350 standalone detector	AcuRite handheld detector
Detection efficiency (> 95 %)	✓	✓	✓	✓	-
Accurate lightning location (< 500 m)	✓	✓	✓	✓	-
Cloud to Cloud and Cloud to ground detection	✓	✓	✓	✓	-
Detection range (>100 km)	✓	✓	✓	✓	-
Risk warning system	✓	-	-	✓	✓
Overall environmental conditions resistance	✓	✓	✓	✓	-
Portability	✓	✓	-	-	✓
Fast setup time	✓	✓	-	-	✓
Intuitive user interface	✓	-	-	✓	✓
Price (under £10000 / 2-month contract)	✓	✓	-	-	✓

Portéclair plans to enter the market by providing a solution offering all of these qualities. The Portéclair system will be packaged a service, Portéclair will perform setup and maintenance for the duration of the contract .

The Portéclair system will be composed of multiple interfaces:

- A network of lightweight, surface adaptable, medium range lightning sensors.
- A wireless communication system connecting the sensors to a central server.
- A server using time difference of arrival algorithms to compute lightning location.
- An iOS mobile application to display lightning information to the user.



## "A five year business plan targeting heavy industries in lightning prone countries"

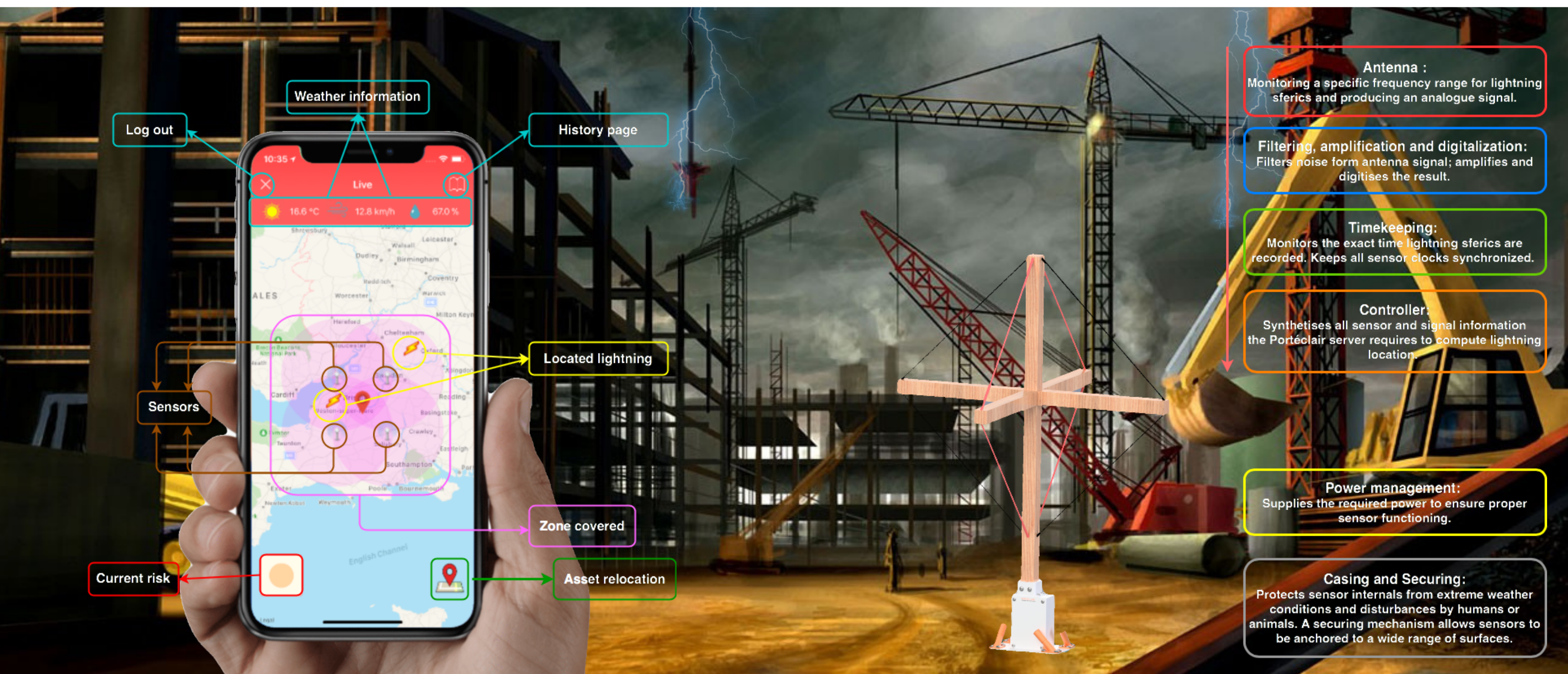
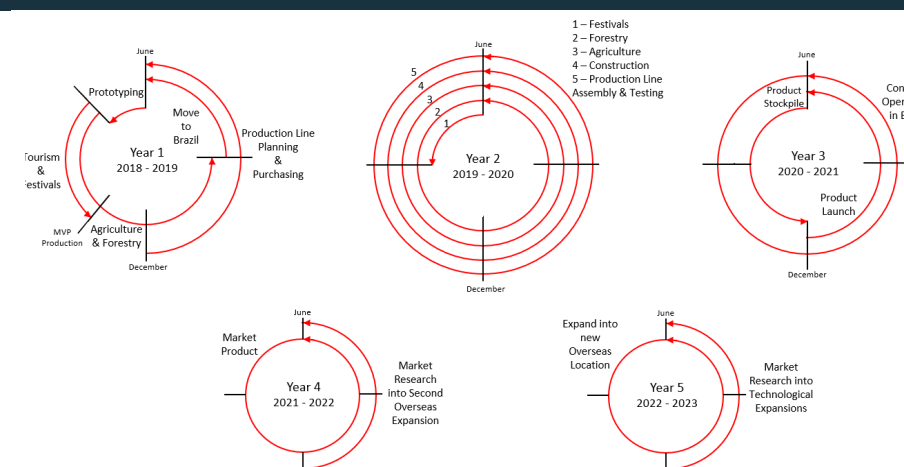
With a UK testing phase launching in Summer 2018, Portéclair plans to expand to Brazil in 2019. We will target heavy industries which operate outdoors, such as construction, forestry and agriculture. With time, Portéclair plan to expand into other lightning prone countries such as Mexico or India and finally sells its sensor network as product.

## "A high quality service that remains competitive by scaling to your needs"

**Approximate Portéclair production costs**  
£223 per sensor  
£700 per server



**Portéclair Base Rate**  
(Price varies on factors such as: Network size, range, detection efficiency, terrain and location)  
Minimum (4 sensors)  
£412 per sensor/month



Portéclair will have two bases of operation:

1. Stepton Mallet: a light industrials unit of 288 m2 at £12,400 per annum.
2. Sao Paulo: an office and industrial warehouse of 258 m2 at a total of £22,780 per annum.

Both sites will include:

- Office space for design work, sales, finance and HR.
- A laboratory for prototyping and testing for quality insurance.
- A secure garage for vehicle and equipment storage.
- A conference room for meetings with suppliers and customers.
- Staff facilities including toilets, lockers, a kitchen and a communal area.

A solution requiring only the most productive and efficient tools:  
AutoDesk, Arduino, RaspberryPi, Cayenne, 3ILm,Swift, Matlab, Python, Firestore, Git

## Risk Mitigation Strategies

Risk No	Risk Description	Mitigating
1	Design not completed on time	Clear outline of specification per subsystem
2	Design not meeting specification	Clear outline of specification per subsystem
3	Unsuccessful integration of subsystems	Clear pre-design documentation of interfacing. Assigning personal to integration
4	Prototype not completed on time	Set clear plan to insure prototype critical tasks are completed
5	System fails verification	Allocate resources to investigate failures and fix them
6	Component supply delays	Ensure flexible supply chain to handle changes. Not reliant on one supplier
7	Failing safety and quality standards	Intermediate Inspection checks
8	Lead time to Assembly	Efficient training. Predictive modelling of lead time. Production of complex design in low demand
9	Foreign corruption and bribery affecting transportation	Pre-planned and backup transportation routes
10	Lack of customers	Effective Marketing of System
11	Competition from larger companies	Effective marketing for USP – quick deployment and portability
12	Ineffective Marketing Strategy	Insure funding for marketing budget
13	Lack of funding	Left over equity for another round of funding. Reduce contracts accepted
14	Delay in customer invoices	Legal contracts binding payments by date
15	Not meeting yearly financial targets	Change business and marketing plans. Multiple target assessments
16	Ineffective recruitment	Training, clear job description, monthly appraisals
17	Annual/Medical/Other absences	Fixed holidays
18	Visa Issues	Effective planning, extra time lag considered, remote working