



EMBRAER
HUMANITARIAN
AIR
SERVICE

**THE DESTINY
OF WORLD
CIVILIZATION
DEPENDS UPON
PROVIDING
A DECENT
STANDARD OF
LIVING FOR ALL
MANKIND.**

NORMAN BORLAUG



THE NEED FOR **HUMANITARIAN AID**

Humanitarian aid organizations are indispensable players in the provision of material and logistic assistance to people around the world. With the rise of seasonal environmental influences, armed conflicts, or badly planned infrastructure systems, access of health care for people in need is an issue that has been omnipresent for far too long. Humanitarian aid organizations have searched for ways to provide support, interlocking their efforts to the needs of today. Mobile Health Units define an interim solution, consisting of a designated team of medical professionals on the move, providing care to the underserved populations. Nonetheless, these units have limited effectivity, and can be improved through the update of their method of transportation.

168 MILLION
TOTAL PEOPLE
IN NEED

98 MILLION
TOTAL PEOPLE
REACHED

+3 BILLION
PEOPLE FORCED
TO CHOOSE
BETWEEN FOOD &
HEALTH CARE

ABOUT US

EHAS (Embraer Humanitarian Air Service) is a subsidiary of Embraer S.A. that provides a sophisticated service for the fulfillment of latent needs in the humanitarian sector. The provision of immunization programs to underserved communities has been put as the foundation of the company's ambition, solving an issue that has long been ignored. By partnering with its sister company, EVE Urban Air Mobility Solutions, reaching remote communities has been improved through the usage of a newly demonstrated technology - eVTOL vehicles, allowing for a more effective & efficient mission procedure. **EHAS** serves humanitarian organization through the planning, management, and operation of the next-generation mobile immunization units, pushing forward the standardization of health care access as a basic human need.



MISSION

Create a **shared air support service** used for the **vaccination** of remote communities in East Africa.



EHAS

FLEET OPERATOR

Operates the eVTOL vehicles

Provides mission specialists

Carries out resupply & quality assurance processes

FLEET MANAGER

Maintains vehicles' quality

Plans mission procedure, protocol & logistics

Supports via a centralized operation hub for mission supervision

TRANSPORT PROVIDER

Provides services to governmental bodies and/or private companies

Performs distinct mission goals through a modular vehicle lay-out

FULFILLING OUR VISION

1- DEMONSTRATION

Starting off with the implementation of the product-service in Kenya using the provision of immunization programs.

2- ITERATION

Once the effectivity of the product-service has been proven, iterations are made for the optimization of the system.

3- EXPANSION

With a fully functional system, the service can be expanded to other operations and mission goals, or even distinct sectors.

4- GLOBALIZATION

With proof and documented structuring, the product-service can be implemented in other regions.

TIME



VISION

Improving the **access of health care and emergency response** through the creation of an **international network of eVTOL air support** in humanitarian aid.



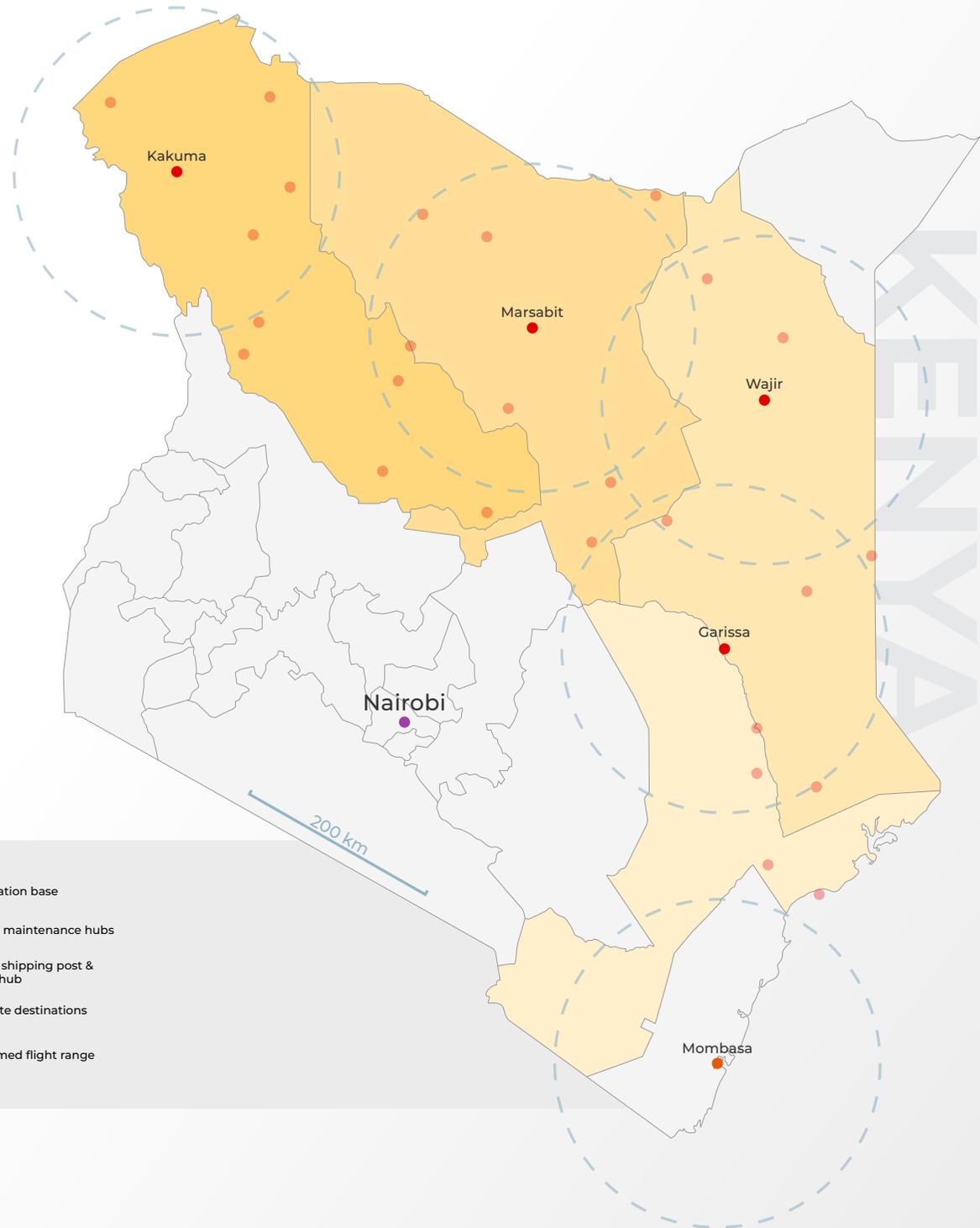


BUSINESS MAPPING

The highlighted regions of operation are the least population dense areas, with a lack of stable electrical grid, and distant human localization. Independent from the absence of infrastructures, **EHAS** is able to reach more than 26 million people, immunizing even the most inaccessible of places. Taking effectivity & efficiency as operation requirements, strategic locations for operation, resupply & maintenance hubs were decided upon.

LEGEND

- | | | | |
|---|---|---|---|
|  | Initial region of operation |  | EHAS operation base |
|  | Added region of operation after half a year |  | Resupply & maintenance hubs |
|  | Added region of operation after a year |  | Provisional shipping post & secondary hub |
|  | Added region of operation after a year and a half |  | Intermediate destinations |
| | |  | EVE's assumed flight range |



MISSION PROCEDURE

EHAS operates a set of vehicles for every operation to fulfill the needs of the mission. Both vehicles are equipped with specific payload for the provision of the immunization programs and resources for the livelihood of the staff, in addition to the seating space for two passengers. Through well-thought payload organization, the mobile immunization units are able to stay on the field for at least a month, opening the possibility of reaching multiple destinations in a single mission.

MOTHERSHIP

VEHICLE #1



Auxiliary Station System



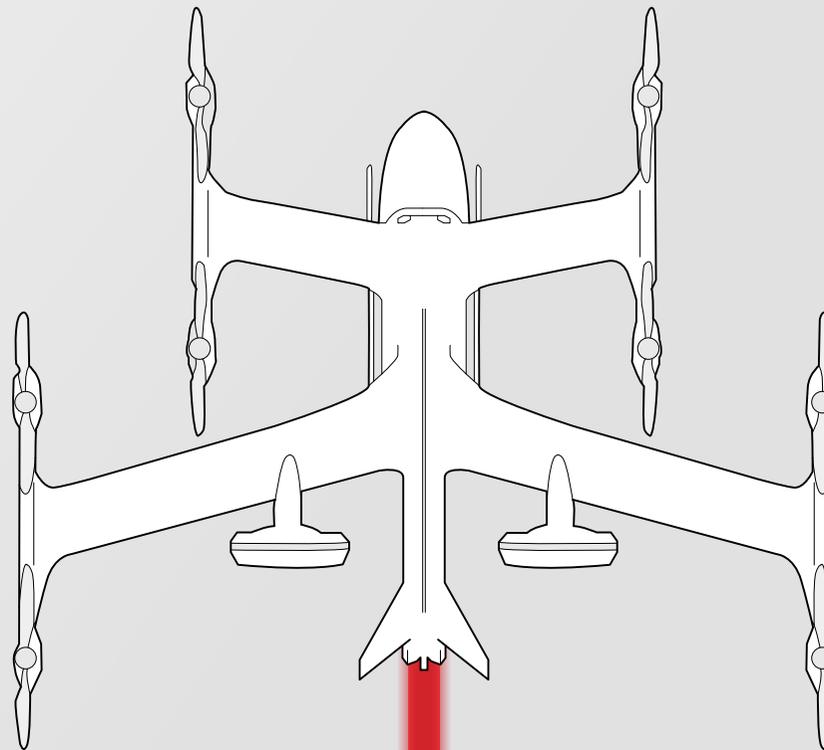
Medical Equipment



Vaccines



Furniture



SUPPORT

VEHICLE #2

Auxiliary Station System



Staff Shelter



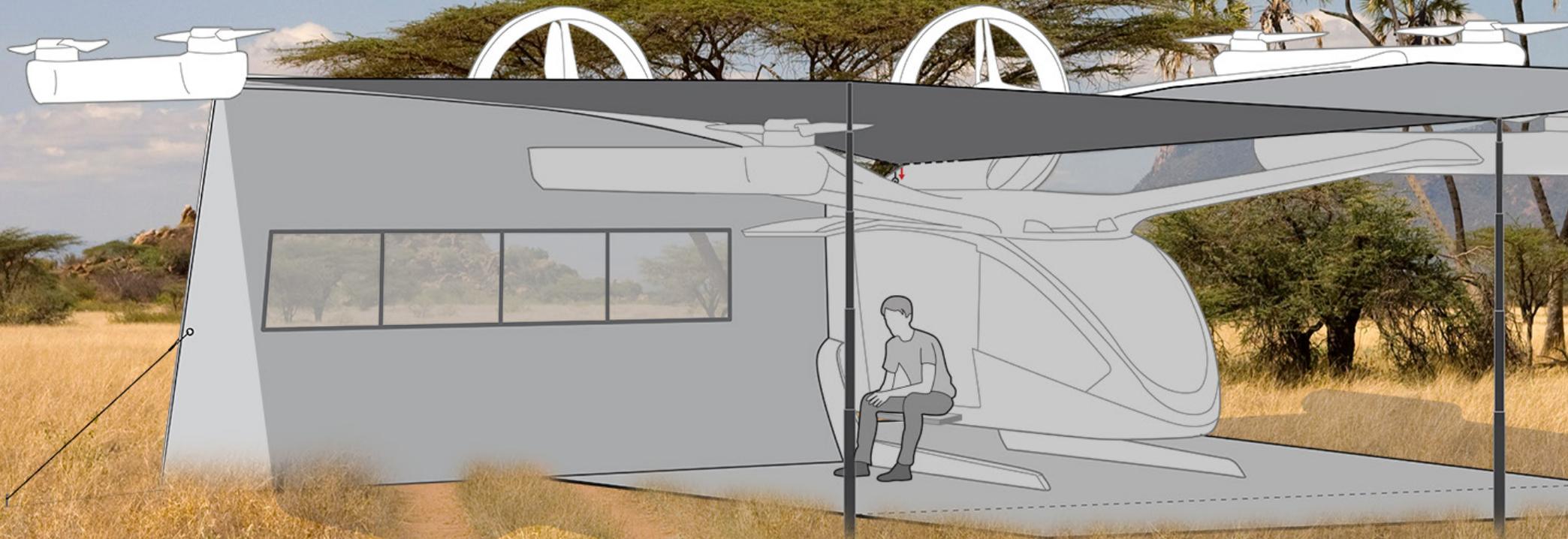
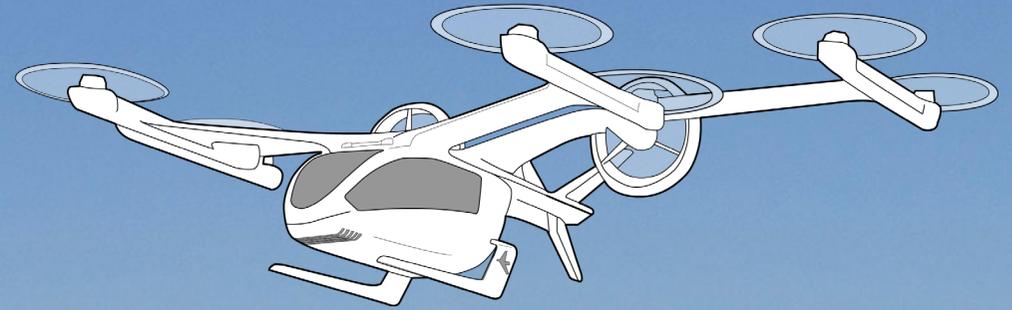
Food



EMS Light Kit



OUR PRODUCT



PRODUCT SPECIFICATIONS



SPEED
> 240 km/h



PROPULSION
Fully electric



CHARGING
Fully charged on the field within a week



VACCINATION
≈ 700 vaccines delivered per day



PASSENGER
1 pilot + 2 medical staff



DURATION
Self-sufficient for a month long operation



RANGE
> 96 km



SET-UP
< 1 hour to set-up auxiliary system

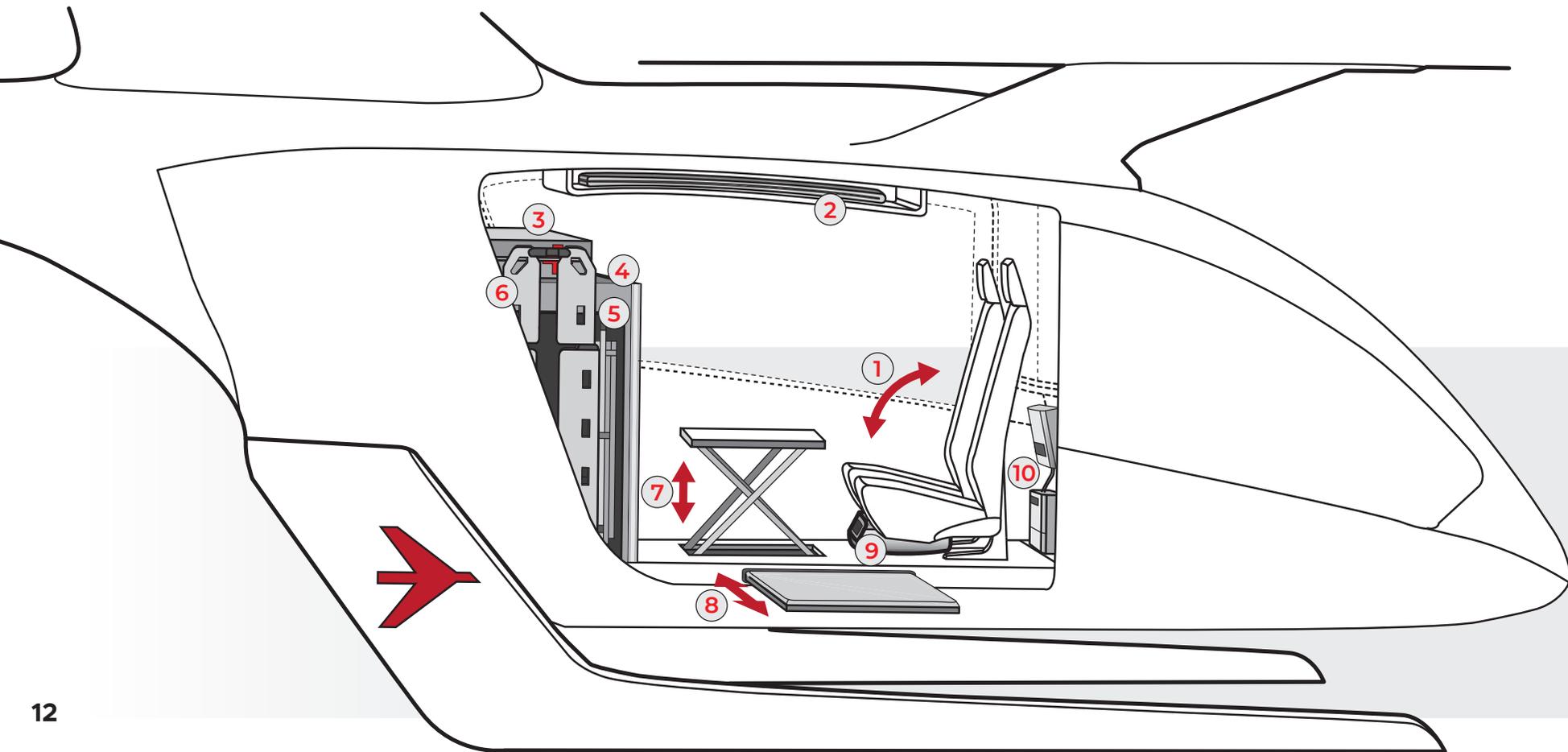


AVAILABILITY
20 vehicles available for operation

EHAS's fleet is composed of **ADAM** - second generation EVE eVTOL vehicles, adapted specifically to fit the needs of immunization programs. With their advanced propulsion system, dedicated payload, and military grade flexible auxiliary station system, they are made to be operated year-round, facing potential harsh environments on the field. Due to the close collaboration with EVE Urban Air Mobility Solutions, **EHAS** is committed to provide a high-end air service with minimal action required from the customer. With the auxiliary station system being equipped with solar panels, the vehicle can be charged without returning to the hubs and can provide power to the on-board equipment. Ultimately, it defines a self-sufficient, sustainable, and sophisticated mobile immunization unit of the future.

INTERIOR LAY-OUT

ADAM's interior lay-out has been designed to support any mission requirement, with modularity at its core. The payload organization can be modified, allowing for the additional storage of medical equipment, and/or assistive resources, without risking the comfort of the medical staff. With foldable furnitures integrated into the interior of the vehicle, immunization preparation can be carried out in a controlled and sanitized environment, ignoring the potential impact of the vehicle's surroundings.



PRICING CHART

DOUBLE

NB. OF MOTHERSHIPS
1 vehicle

NB. OF SUPPORTS
1 vehicle

AVERAGE DAILY VACCINATION RATE
≈ 700 vaccines

TOTAL VACCINES CARRIED
18,000 vaccines

OPERATION DURATION BEFORE RESUPPLYING
25 days

€320 per hour

TRIPLE

NB. OF MOTHERSHIPS
2 vehicles

NB. OF SUPPORTS
1 vehicles

AVERAGE DAILY VACCINATION RATE
≈ 1200 vaccines

TOTAL VACCINES CARRIED
36,000 vaccines

OPERATION DURATION BEFORE RESUPPLYING
38 days

€470 per hour

QUADRUPLE

NB. OF MOTHERSHIPS
2 vehicles

NB. OF SUPPORTS
2 vehicles

AVERAGE DAILY VACCINATION RATE
≈ 2000 vaccines

TOTAL VACCINES CARRIED
36,000 vaccines

OPERATION DURATION BEFORE RESUPPLYING
50 days

€615 per hour

- 1 The vehicle is equipped with two passenger seats, for medical staff, flight crew, or other personnel. The seats can fold, allowing for additional space for patient or cargo transportation.
- 2 The vehicle has a compartment attached to the ceiling which allows for the storage of the overhead tarps, sidewalls, and separators.
- 3 The vehicle is equipped with a first aid kit, which contains standard tools, a pulse oximeter and a defibrillator.
- 4 A refrigerator is added to the vehicle in order to keep certain vaccines at the specified temperature range provided by the distributor.
- 5 A foldable table and chair are provided, offering supportive furniture to the staff and a place to seat for the patients. The tent poles are also stored opposite to the refrigerator.

- 6 The vehicle is equipped with a scoop stretcher, allowing to transport an injured patient to the vehicle, or to the supportive terrain traveling crew.
- 7 Within the floor of the vehicle, a foldable table can be raised in order to offer a space to prepare the vaccines.
- 8 A sliding chair can be pulled to offer a seating option for the staff. It comes in addition to the foldable chair, and is stored in an efficient manner.
- 9 The vehicle is equipped with a mobile oxygen concentrator, replacing the need for an oxygen cylinder.
- 10 In order to use the generated power by the solar panels, the solar powered tarp is connected to a string inverter and charge controller.

IN BRIEF

EHAS

SUSTAINABLE

- Helping remote communities
- Creating jobs by hiring local workforce
- Knowledge transfer from international professionals
- Excess produced power from the hubs shared with the community
- Zero-emission future

EXPANSION

- Supporting the implementation of eVTOL in Africa
- Increasing awareness towards humanitarian sector
- Bringing potential investors to the region

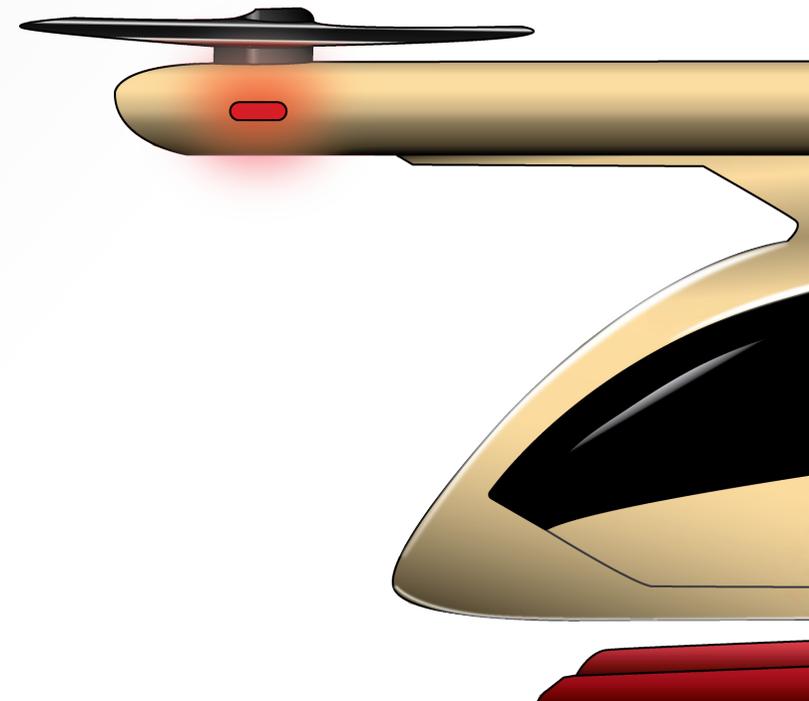
ADAM

SELF-SUFFICIENT

- Equipped with a military grade auxiliary station system that acts as an operation tent
- Equipped with solar panels for power generation
- Carries payload for the livelihood of the staff

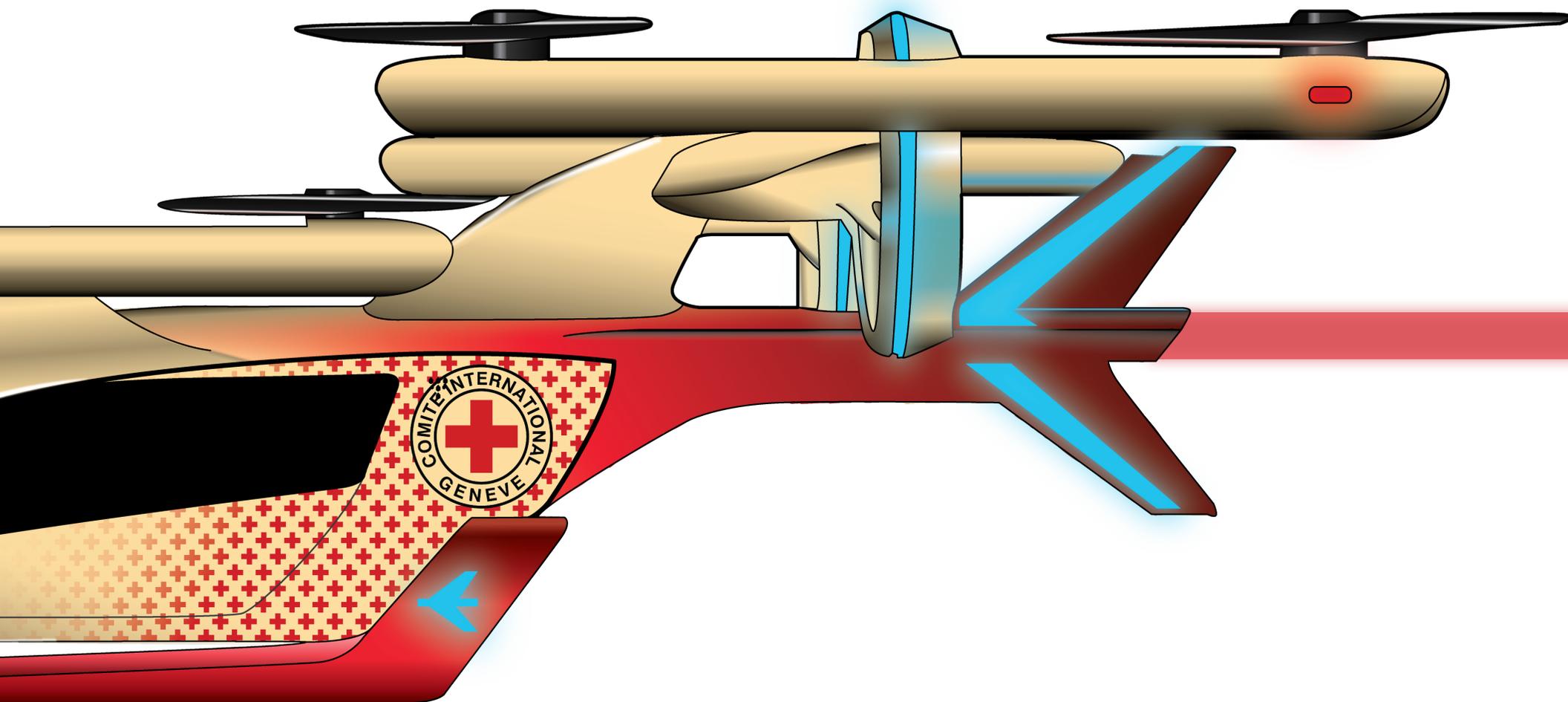
CUSTOMIZABLE

- Vehicle lay-out designed to be modular for different mission goals
- Auxiliary station system defines the benchmark for future operations





EMBRAER HUMANITARIAN AIR SERVICE





REACHING THE FORGOTTEN

ITAMAR BUKAI - JULY, 2021