FAIR PROMOTES ELECTRIC AVIATION

INFOSHEET #3

FLEXIBLE AND ON-DEMAND, CAN ELECTRIC AIR TRAVEL CHANGE HOW WE FLY?

Electric aviation holds great potential to transform regional travel. Planes are expected to be smaller, quieter and cheaper than what we are used to. This potential allows us to challenge all aspects of air travel.

In the FAIR project, we investigate the implementation of electric aviation in the Kvarken region. This is a complex topic. Electric aviation can have a huge impact on society as a whole and the air travel system is also complex, with airlines, airports, service providers and others that are used to operating in a certain way.

One of these activities in FAIR is the Innovation Process, in which we develop speculative proposals of possible futures. These proposals are called prototypes. These prototypes are not final products or services, and do not claim to be the best possible solution to a problem. They are examples and by making them as real as possible, stakeholders can experience them and try them out. This allows us to discuss new ideas together, and form a better understanding of what would be fitting for the region. FAIR Volta is one of these prototypes.

With FAIR Volta, we are exploring a possible answer to the question "What could flexible, on-demand regional electric air travel feel like for a consumer?"

This question gives us some starting points, for example:

- We are used to air travel based on strict schedules that are planned far in advance – what if departure times become flexible?
- What if air travel becomes on-demand - how do passenger's make their demands known?
- Can flexibility be something that passengers are rewarded for?

VOLTA – AN IMAGINARY ELECTRIC AIRLINE FOR THE KVARKEN REGION

FAIR Volta is a booking website for the imaginary airline Volta, specialised in regional electric air travel in the Kvarken region. Volta operates 10 seater electric airplanes and provides services between airports in Norway, Sweden and Finland in and directly around the Kvarken region. Visiting the Volta website, you can book a trip in the Kvarken region using electric airplanes. Volta is designed different from how we are used to booking airplane tickets. There are two key differences.

Figure 1.1

Figure 1.2

Figure 1.3

TRAVELLING DOOR TO DOOR

The first key difference, is that trips are booked from door to door, or address to address, instead of airport to airport (See Figures 1). You can notice this by the address field on the starting page, where you select your departure address (See Figure 1.1). In the next screen you select your departure address and enter the date and travelling passengers. Volta automatically selects the closest airports for your trip (See Figure 1.2).

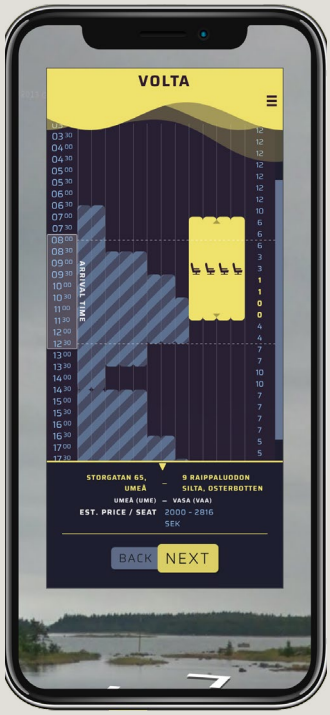

Figure 2.1

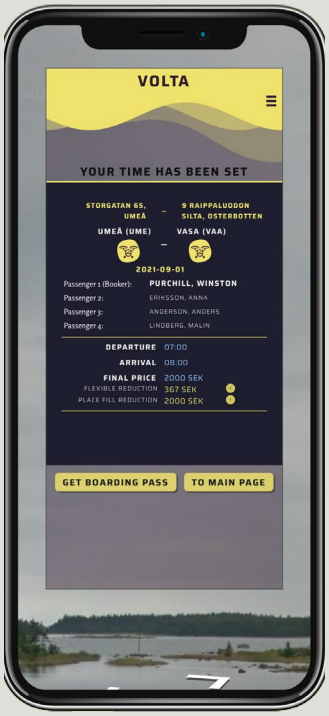

Figure 2.2

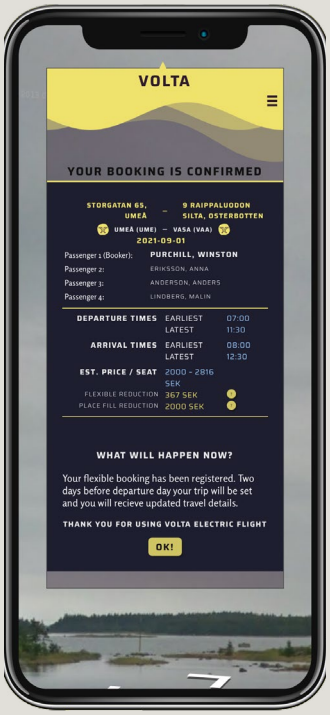

Figure 2.3

Because Volta offers on-demand travel with flexible departure times, it is especially important that you feel secure that you will be able to travel to and from the airport. To facilitate this, Volta offers different options that you can select while you book (Figure 1.3). To stimulate your curiosity, the addresses are shown in the background using Google Streetview and you can explore your destination.

TIMES AND PRICING

The second key difference, is that Volta works with flexible times and prices (See Figures 2). Planes can leave at any time, and the schedule will be based directly on the demand of passengers. This means that passengers select their preference as a time range where they indicate the earliest time they would want to travel, and the latest time. This can be a small range, if your trip has to happen at a certain time. Or it can be a very large range, if you are very flexible. Passengers select this range for their amount of seats (marked in yellow). In the background, existing bookings by others are visible (Figure 2.1). Volta aims to fly with full planes whenever possible, to reduce the amount of trips. This is why the pricing is also flexible. The larger the range of departure times selected by the booker, the bigger the chance this range can be aligned with other passengers. This is why two factors influence the price: the flexibility of the booker gives a discount, and filling a plane gives an extra discount. Of course, the final price will depend on what other bookings are made, and thus the price is shown as an estimate, with a minimum and maximum prices the booker can expect to pay (See Figure 2.2). The final price and departure time will be set by the Volta algorithm 3 days before departure (See Figure 2.3). This system aims to stimulate passengers to adjust their travel plans to others. To reward flexibility in order to optimise the number of flights between the needs of all bookers.

IMPLICATIONS OF VOLTA

Volta is currently being evaluated in workshops and dialogues with different stakeholders to get feedback and understand the implications this could have for the complex air travel network. For example:

- What are the implications of a flexible, on-demand and door-to-door electric aviation?
- How would a flexible schedule impact airport operations such as ground services but also restaurants, cafes and shops?
- Can the operations of an electric airline integrate sustainable thinking beyond replacing the drivetrain, for example by aiming to reduce the amount of flights to a minimum?

Volta is made as a discussion tool to explore these questions, starting from the consumer

side. There are certainly issues with the system proposed by Volta, and not everyone may like it. However, we believe it is important to challenge the *way things are* with new ideas, and to see which parts of new ideas might be interesting to further develop in the future.

WORK PACKAKGE

WP 3 - Cross boarder innovation process

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ABOUT FAIR

FAIR is preparing the Kvarken region for an early implementation of electric aviation. The project increases the knowledge base about electric aviation, investigates the possibilities and surveys both the needs and the required technical investments. FAIR is a first step towards a rapid introduction of sustainable aviation in the Kvarken region.

FINANCIERS

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Municipality | Brønnøy Municipality | Alstahaug Municipality
Helgeland Regional Council | Indre Helgeland Regional Council
Rana Utvikling

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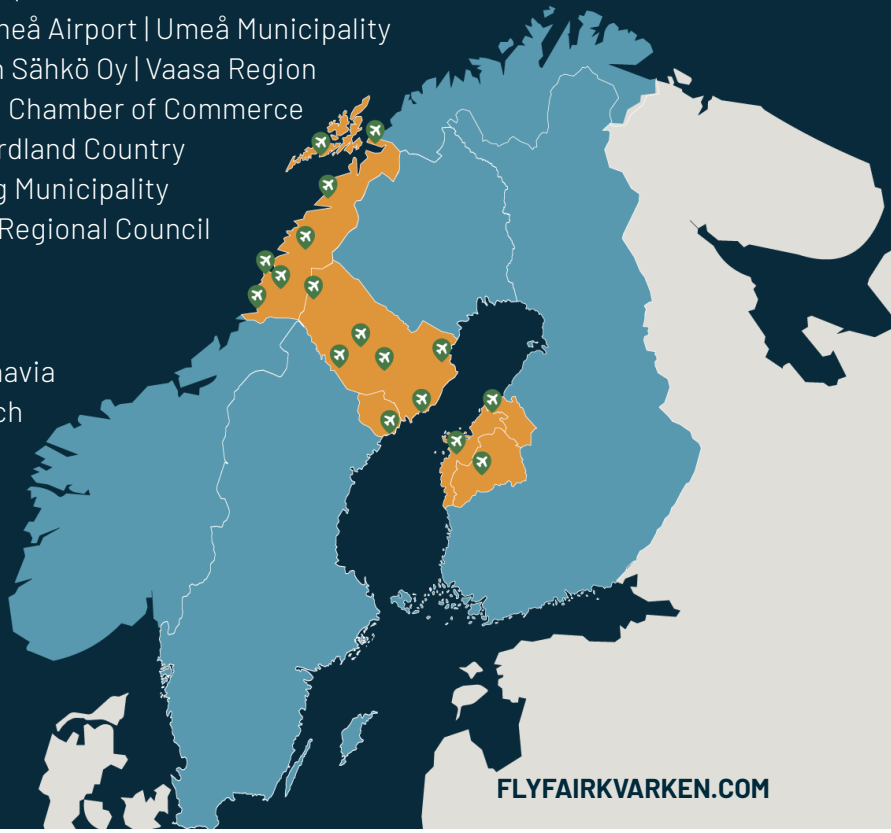
NEA – Nordic Network for Electric Aviation
Umeå kommunföretag AB | Umeå Institute
of Design | The Swedish 2030-secretariat
Transportföretagen



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