

# Product Design Specifications

Product: Container Sleeping Accommodation

## Product Design and Performance Issues

<ul style="list-style-type: none"><li>● Performance<ul style="list-style-type: none"><li>○ What does the product need to do?</li><li>○ What speeds does it need to operate at?</li><li>○ What loads will it experience?</li></ul></li></ul>	<ul style="list-style-type: none"><li>● The container will provide sleeping accommodation during festivals.</li><li>● Using the accommodation has to be intuitive for the new customers.</li><li>● Each capsule will provide a bed, a power socket and will be lockable.</li><li>● There will be one person and two person capsules.</li><li>● The phase of providing the key and the sheets must be very quick.</li><li>● Each container will be able to accommodate 20 people.</li><li>● Extra containers with showers and toilets will be available.</li></ul>
<ul style="list-style-type: none"><li>● Operational Requirements<ul style="list-style-type: none"><li>○ Speed (How fast? How slow? How often ?)</li><li>○ Continuous or discontinuous</li></ul></li></ul>	<ul style="list-style-type: none"><li>● Each container will be used at least 3 days per week, normally within weekends.</li><li>● Within weekdays, each container will receive its cleaning, maintenance and transportation to the next festival campsite.</li></ul>
<ul style="list-style-type: none"><li>● Expected Product Service Environment<ul style="list-style-type: none"><li>○ What is the operating temperature range for this product?</li><li>○ Will there be any anomalies in power/fuel available for this product?</li><li>○ How will the product be treated in service?</li></ul></li></ul>	<ul style="list-style-type: none"><li>● The product will be used in campsites during festivals, sometimes with uneven terrains, hot and rainy weather conditions.</li><li>● The container must insulate properly with different weather conditions.</li><li>● The container will be placed over a trailer.</li><li>● Each container will have its own energy plant, otherwise, it will plug to the electric system of the festival.</li><li>● The care of the customers for the product won't be delicate. Careful with "don't be gentle, it's a rental".</li><li>● The container will be above a platform so it won't be in direct contact with the grass, in this way, a minimum amount of the grass will be damaged.</li></ul>

<ul style="list-style-type: none"> <li>○ What impact will the product have on its environment?</li> </ul>	
<ul style="list-style-type: none"> <li>● Product Maintenance Requirements <ul style="list-style-type: none"> <li>○ Can product be maintenance - free ?</li> <li>○ If routine maintenance is required, can it be done by the owner/operator?</li> <li>○ Will professional maintenance be required ?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Each campsite will have vacuums and water hose for maintenance.</li> <li>● A minor cleaning will be done after each customer checkout. An overall cleaning will be done after each event.</li> <li>● The cleaning will be done by the company.</li> <li>● The containers maintenance will be done by the company or by an operator depending of the situation.</li> <li>● Most of the materials used in the container, will be easy to find.</li> <li>● The headquarter of the company will include a major maintenance unit.</li> <li>● When a customer arrives to the accommodation, he/she will receive sheets, when leaving, he/she will hand them in in a cleaning basket.</li> <li>● Dirty sheets will be sent to an operator.</li> <li>● Mattress will be covered with plastic in order to be easier to clean.</li> </ul>
<ul style="list-style-type: none"> <li>● Expected Price</li> </ul>	<ul style="list-style-type: none"> <li>● The accommodation can't be much more expensive than staying in a tent.</li> <li>● The price should include the camping fee.</li> <li>● The price may vary within each festival and package.</li> <li>● The price will start at 30 euros.</li> <li>● One day sleeping accommodation is allowed.</li> <li>● There will be 3 day packages for those who stay the whole weekend.</li> </ul>
<ul style="list-style-type: none"> <li>● Competition</li> </ul>	<ul style="list-style-type: none"> <li>● Festitent.com <ul style="list-style-type: none"> <li>○ Inflatable tents</li> </ul> </li> <li>● Kartent.com <ul style="list-style-type: none"> <li>○ Cardboard tent</li> </ul> </li> <li>● Tentenzo.com <ul style="list-style-type: none"> <li>○ Packages with mattress and tent</li> </ul> </li> <li>● B-and-bee.com <ul style="list-style-type: none"> <li>○ Hexagonal capsules</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Product Packaging Requirements <ul style="list-style-type: none"> <li>○ Can we use environmentally friendly packaging and packing materials?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● There is no necessary packaging.</li> <li>● A bracelet will be used to enter to the campsite.</li> <li>● The key of the capsule will be a sensor in the bracelet.</li> <li>● When leaving, the bracelet will be returned.</li> <li>● A package for the sheets isn't necessary.</li> </ul>

<ul style="list-style-type: none"> <li>○ How much packaging and packing materials are really necessary?</li> </ul>	
<ul style="list-style-type: none"> <li>● Client usage</li> </ul>	<ul style="list-style-type: none"> <li>● The customer must be able to use the system without requiring instructions.</li> <li>● The system has to be intuitive and self explaining.</li> <li>● The NFC readers will have the same logo as the bracelet, in order to be intuitive that you have to make contact between them.</li> </ul>
<ul style="list-style-type: none"> <li>● Transportation</li> </ul>	<ul style="list-style-type: none"> <li>● Each container will be transported in a trailer to each location.</li> <li>● The company will own several trailers and each truck will transport one container at time, as soon as it is parked on site, the truck will return to company's headquarter and will repeat the operation.</li> <li>● When the festival comes to an end, trucks will repeat this operation in order to take the containers back to headquarters.</li> </ul>
<ul style="list-style-type: none"> <li>● Installation</li> </ul>	<ul style="list-style-type: none"> <li>● Once the container arrives to the spot, it must be parked and connected to water and electricity.</li> <li>● Installation of each container will take approximately 30 min.</li> </ul>
<ul style="list-style-type: none"> <li>● Storage</li> </ul>	<ul style="list-style-type: none"> <li>● While not using the containers, they will be transported to the headquarter unit where there they will receive maintenance or are stored.</li> </ul>
<ul style="list-style-type: none"> <li>● Size</li> </ul>	<ul style="list-style-type: none"> <li>● Containers have the standard size of 2.3 x 2.3 x 12 m</li> <li>● The trailer size must be added.</li> </ul>
<ul style="list-style-type: none"> <li>● Weight</li> </ul>	<ul style="list-style-type: none"> <li>● Each remodeled container will weight approximately 2 tons.</li> </ul>
<ul style="list-style-type: none"> <li>● Product Aesthetics</li> </ul>	<ul style="list-style-type: none"> <li>● The container will be painted in the outside with colors that go along with the branding and it must be easy to find the container you are staying.</li> <li>● They must have letters of a pattern where you can distinguish in which container you are accommodated.</li> <li>● In the inside, neutral and light colors will be used in order to lighten up the place.</li> </ul>
<ul style="list-style-type: none"> <li>● Ergonomic Requirements <ul style="list-style-type: none"> <li>○ Which user/operator features are desirable in this product?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● The only thing the operator will need to do is to park each container on site.</li> </ul>

<ul style="list-style-type: none"> <li>○ Are there problem areas for users/operators? Can we design around them?</li> </ul>	<ul style="list-style-type: none"> <li>● Each capsule will have the size of an individual bed and 20 cm more in the size. (1m width - 2.3m long)</li> <li>● The height of each capsule will be 1 meter approximately.</li> <li>● Nothing will have sharp corners.</li> <li>● Ladders will be used in order to climb to the second-floor capsules, this will include a handrail as well.</li> <li>● The customer must fit in the capsule in a seated position.</li> </ul>
<ul style="list-style-type: none"> <li>● Material Requirements <ul style="list-style-type: none"> <li>○ What are the strength requirements?</li> <li>○ What are the rigidity/compliance requirements?</li> <li>○ Is product weight of importance?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● The materials used in each container will be waterproof and durable.</li> <li>● Easy to wash.</li> <li>● Non corrosive.</li> <li>● Hard and resistant to misuse.</li> <li>● The sheets will be hypoallergenic and non-toxic.</li> <li>● It must be taken in consideration for the plastics used in each capsule that they don't provoke gases while being in sun exposure.</li> <li>● Hard to break materials.</li> <li>● Non slippery.</li> <li>● The bed mattress will be of foam covered with plastic.</li> </ul>
<ul style="list-style-type: none"> <li>● Possible off - the - shelf component parts. <ul style="list-style-type: none"> <li>○ Which parts of this product be purchased instead of being made by us?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Since the containers are recycled, they will be bought and commissioned to another company in order to be remodeled.</li> <li>● The sheets will be bought also.</li> <li>● The cleaning of the sheets will be done by another operator.</li> </ul>
<ul style="list-style-type: none"> <li>● Product Life Cycle (disposal)</li> </ul>	<ul style="list-style-type: none"> <li>● Since the containers are recycled, they will be bought and remodeled.</li> <li>● This new product is supposed to last at least 5 year as a sleeping accommodation.</li> <li>● Later, it can be remodeled to become a container shop or they can be donated to poor areas to construct schools and temporary houses.</li> <li>● After that, the materials can be recycled to make new products.</li> </ul>
<ul style="list-style-type: none"> <li>● Expected product safety requirements <ul style="list-style-type: none"> <li>○ Potential operator hazards.</li> <li>○ Potential for misuse/abuse.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Emergency exit signs.</li> <li>● Emergency equipment.</li> <li>● Potential misuse will be people falling from the capsules, handrails will be used to avoid this.</li> <li>● The operator will never have to carry anything.</li> </ul>
<ul style="list-style-type: none"> <li>● Taste / Prototypes</li> </ul>	<ul style="list-style-type: none"> <li>● A container should be prototyped and tested in order to see its functionality.</li> </ul>

<ul style="list-style-type: none"> <li>• Company Specifications (festivals)</li> </ul>	<ul style="list-style-type: none"> <li>• Some logos of the festivals can be placed in the back of the container.</li> <li>• The arrangement of the containers layout will vary within each festival, according to the land specifications provided by the festival.</li> </ul>
<ul style="list-style-type: none"> <li>• Market</li> </ul>	<ul style="list-style-type: none"> <li>• The market will be festivals in Belgium, Netherlands and Germany.</li> </ul>
<ul style="list-style-type: none"> <li>• Social implications</li> </ul>	<ul style="list-style-type: none"> <li>• The customers may tend to think of the container as an hotel and they can complain of things like noise.</li> <li>• Special attention should be placed in this in order to keep a calm environment.</li> <li>• The layout of the container arrangement will solve this, providing open and common areas.</li> </ul>
<ul style="list-style-type: none"> <li>• Documentation</li> </ul>	<ul style="list-style-type: none"> <li>• A set of instructions will be delivered to the driver.</li> <li>• These will include the installation and the way the service and container works.</li> <li>• Also how to fix it.</li> <li>• It will include figures.</li> </ul>

## Market issues

<ul style="list-style-type: none"> <li>• Potential customer base <ul style="list-style-type: none"> <li>○ Who will buy this product? Why?</li> <li>○ Have you listed all potential classes of customers?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• The first user is the festival goer</li> <li>• The secondary user is the operator.</li> <li>• Tertiary user is the festival organization.</li> </ul>
<ul style="list-style-type: none"> <li>• Market constraints on product. <ul style="list-style-type: none"> <li>○ Who is buying this type product? (customer base)</li> <li>○ What is currently selling?</li> <li>○ What is currently not selling?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Usually, the festival goers camp in their own tents during a festival. There are some services which provide tents and sleeping bags, other services provide capsules and some of them rent out the tent.</li> </ul>
<ul style="list-style-type: none"> <li>• Expected product competition (These will be benchmarked )</li> </ul>	<ul style="list-style-type: none"> <li>• Festitent.com</li> </ul>

<ul style="list-style-type: none"> <li>○ What are the strengths of each competing product? Can we incorporate them?</li> <li>○ What are the weaknesses of each competing product? Can we improve ?</li> <li>○ What are the market shares of competing products ?</li> </ul>	<ul style="list-style-type: none"> <li>○ Inflatable tents, only rented, they only provide the tent.</li> <li>● Kartent.com <ul style="list-style-type: none"> <li>○ Cardboard tent which you cannot take, they are made of recycled cardboard and you can decor them.</li> </ul> </li> <li>● Tentenzo.com <ul style="list-style-type: none"> <li>○ Packages with mattress and tent. They also have a 24/7 shop where you can find basic stuff. You can rent and buy packages.</li> </ul> </li> <li>● B-and-bee.com <ul style="list-style-type: none"> <li>○ Hexagonal capsules which are moved within each festival.</li> </ul> </li> </ul> <p>All of these competitors include electricity and power sockets, also they don't include toilets and showers.</p>
<ul style="list-style-type: none"> <li>● Target product price</li> </ul>	<p>70-100 euros.</p>
<ul style="list-style-type: none"> <li>● Target production volume and market share. <ul style="list-style-type: none"> <li>○ Is there a market for this product? How do you know?</li> <li>○ Is the potential market sufficiently large to justify investment in a new product?</li> <li>○ Is the new product sufficiently better than the competition?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Around 40,000 people camp in festivals.</li> <li>● Each container will fit up to 20 people.</li> <li>● Initially, it is expected to give accommodation to around 200 people per festival.</li> <li>● It is important to check the initial investment of remodeling each capsule.</li> </ul>
<ul style="list-style-type: none"> <li>● Expected product distribution environment. <ul style="list-style-type: none"> <li>○ How will the packaged product be treated in shipping, storage, and on the shelf?</li> <li>○ Are adequate shipping facilities available?</li> <li>○ Will installation require a professional?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● The distribution and installation will be made by our operators.</li> <li>● It must be checked if we can carry more than one container in each trailer.</li> <li>● The installation of each capsule will have to be done in a few minutes.</li> <li>● There must be given thought to the logistics behind the transportation of the containers.</li> </ul>

# Capability Issues

- Company constraints on product design, manufacture, and distribution.
  - What are our manufacturing capabilities?
  - Should we manufacture ourselves or outsource?

- The manufacturing will be done by another company.
- There must be given thought to the logistics behind the transportation of the containers.
- The cleaning of the sheets will be done by another company.