UNICEF Target Product Profile
Staff Office and Accommodation

UNICEF Supply Division Innovation Unit
Version: 3.0
Date: October 2017

Purpose of the UNICEF Target Product Profile (TPP):

UNICEF creates Target Product Profiles (TPPs) to communicate requirements for products which are currently not available on the market but which fulfil a priority need to be used in the unique context in which UNICEF and its partners operate. TPPs include information on how the new product will be used, by or for whom, and the minimum and ideal performance criteria. The purpose of TPPs is to guide industry to develop products that meet UNICEF's needs, however they do not act as the final procurement specifications but rather as a list of desired requirements that combined describes the ideal product considering the context.
UNICEF recognizes that innovation is an iterative process, and that suppliers must balance sometimes competing requirements against product development progress. To allow for creativity, and the innovation process to take its course, TPPs are less prescriptive than procurement specifications, and can therefore be challenged by the industry.

For more information please visit our TPP page

The Staff Office and Accommodation emergency structure UNICEF is looking for by means of this TPP, is substantially lighter and easier to transport and set up than the flat-pack structure currently on offer with UNICEF. Whereas the most appropriate technology is left open in this TPP, it is most likely a tent or tent-like solution that fits the requirements of this TPP best.

Problem Statement / Need for the Product

In the context of its humanitarian response activities UNICEF makes use of emergency structures as living and office space for its staff. Emergency structures are those that can be rapidly deployed and made ready for use, offering fit-for-use spaces in the shortest possible timeframe.

Recent market screening of emergency structures and assessment of the suitability of staff structures currently in use by UNICEF pointed out that certain humanitarian response contexts and processes are not well served with the current staff structures, while innovative technologies are available in the emergency structures sector that could potentially fill this gap.

In particular, certain humanitarian response contexts and processes would be served better with less bulky solutions that are lighter, easier to transport and erect; that have a better climatic performance, a lower purchase and operating cost; and offer a greater flexibility during and after use, while maintaining a high level of hazard resistance and comfort of use. These structures are required to be fully operational in a very short time span. Such staff structures would be suited better for use in the early stages of emergency response processes in a greater variety of disaster contexts.

UNICEF therefore is looking for an easy-to-transport staff structure that optimally applies the current state-of-the-art in emergency structures to respond comprehensively to this particular set of requirements, in the field and throughout the supply chain, for UNICEF staff's living and office space.

Programmatic relevance for UNICEF

The timeliness and quality of services UNICEF delivers to affected populations in the programmatic areas of Nutrition, Health, Education, WASH and Child Protection is related to UNICEF's capacity to be operational in the field in a timely manner and throughout the early stages of a response.

Current products or response used by UNICEF

UNICEF Supply Division currently procures and supplies light camping tents, suited for use for a few weeks only, as part of the emergency deployment kit of emergency response staff; and flat-pack accommodation units of approximately 15.7m² internal surface, weight of approximately 1600kg, complete with hydraulic and electrical systems, air conditioning and furniture, suited for use over several years. In addition, in certain contexts, UNICEF uses its multipurpose tents for offices.

Volume and potential impact

Humanitarian agencies throughout the world make use of rapidly deployed and made ready-for-use staff structures to start operations in emergency contexts in a timely manner. Structures that combine a high level of user comfort and hazard resistance with ease of transport and erection, low cost, a better climatic performance and flexibility is of interest to all of them.

The number of staff structures UNICEF uses per year correlates with the scale of humanitarian emergency requests and the types of disaster contexts these emergency requests apply to. In the period 2009 – 2014 UNICEF procured a total of 432 prefabricated structures to serve as office and living space for its staff. 18% (76) of these were procured through UNICEF Supply Division, while the remaining were purchased from local markets. Having staff structures available that meet the requirements laid out in this TPP is likely to increase the percentage of staff structures procured through UNICEF Supply Division.

Target unit price

A target unit price above 5.000 USD for the staff structure with either a furniture pack for office use or a furniture pack for living use cannot be justified, from a value for money perspective, in light of the cost of longer term solutions available on the market. A target price of 2.000 USD would allow a broad spectre of UNICEF operations to choose for this staff structure in favour of locally available and/or longer term solutions.

Use of product in UNICEF context

Supply Chain	
Ordering	Typically staff structures are ordered by UNICEF staff in programs and operations. They typically rely on what UNICEF has as standard offshore offer and is pre-positioned in its warehouses or with suppliers. UNICEF staff at times request clarifications in relation to all aspects of the staff structures, and most commonly: ease of set-up and onward transport, composition of the furniture kit, durability in a certain climate and hazard profile, expected energy consumption for climate control, internal organisation options and cost.
International transport – by supplier	Staff structures are delivered by suppliers to UNICEF's international pre-positioning warehouses across the globe, or directly to UNICEF country office warehouses.
Onward international	From international pre-positioning warehouses, staff structures are transported, by UNICEF, to country office warehouses. This is done as air-

transport – by UNICEF	freight, by sea or land transport. Common international transport practices apply.
Onward transport in operations	Onward transport of staff structures from country office warehouses to where they will be set up and used is typically managed by UNICEF country offices. Transport modes commonly used are all sizes and types of trucks and lorries, by air or on boats. During onward transport, the staff structures are handled frequently and often under less than optimal conditions. It is not uncommon for staff structures to be transported under heavy rain, over bad roads, via water or under time pressure in relation to being under fire, a limited budget or the urgency of bringing relief to affected populations. Transport is often done by local companies that have been subcontracted to perform this task. During onward transport, it may be that staff structure packages are to be opened up for inspection by authorities. Staff structure packages may need to be opened up and transported further split up in parts. This requires easy identification of parts that belong to one structure, to reduce the risk of loss or misplacement.
Pre-positioning	In contexts known for recurrence of emergencies, staff structures can be pre-positioned. Staff structures can remain pre-positioned up to several years, under less than optimal conditions due to climate conditions, frequent handling, absence of warehouse equipment and professional practices. Staff structures also risk to be misplaced during pre-positioning.
Climate	
Climate	Staff structures are used in the whole of the populated world, and as such all climatic conditions under the classification STANAG2895 MMS A1-A3, B1-B2 and C0-C2 are applicable. Critical conditions are hot and dry – risk of excessive heat building up inside the staff structure; hot and wet – risk of excessive heat and humidity building up inside the staff structure, in combination with heavy rains; cold – risk of excessive heat loss from the staff structure and internal condensation. Windows may be used to regulate internal temperatures and humidity. Staff structures may be sited in shadowed areas, or equipped with a shading net to reduce heat building up inside.
Climate conditioning	Climate conditioning is practiced by means of a HVAC (Heating, Ventilation, Air Conditioning) system in the staff structure, plugged into an electrical system.
Hazards	
Siting	Site selection is done by UNICEF, and site preparation is managed by UNICEF. Staff structures are commonly set up in protected compounds. In that, staff structures are set up in a great variety of conditions, ranging from entirely exposed to the elements to somewhat shielded by the vicinity of trees, buildings or walls. Staff structures are set up in the entire variety of soil conditions that can be found in the populated world. If the context allows, concrete slabs are poured to install staff structures on. When time and/or context do not

	allow for this, obstacles are removed from the site, it is flattened with a soft slope for drainage, a drainage canal is built around it, and the staff structure is installed directly on it, and anchored into the soil and/or ballast anchored. Staff structures are set up in areas with ample space available as well as in densely occupied areas with a high competition for available space. In some areas, sites are restricted in size to the footprint of the staff structure and a minimal surrounding space for its installation.
Hazards	Staff structures are used in the whole of the populated world, and as such all hazard conditions can be applicable. The staff structure is used in all contexts UNICEF is operational in, thus the staff structure is exposed to the hazard profiles of these contexts. The soil conditions are all that can be found in the contexts UNICEF is operational in, with reference to ASTM-D2487. Some contexts in which staff structures are used are vulnerable to fires.
Violence	Often staff structures are used in conflict situations. Fighting parties are made aware of the humanitarian use of staff structures by clearly marking them with the UNICEF logo. In some contexts however, such marking has an adverse effect on safety, and is removed.
Functionality	
Set-up	UNICEF commonly engages a local team, which may or may not be a construction company, to set up staff structures, assemble furniture and make the structure ready for use. This team is supplied with the site preparation, set-up, electrical system and furniture assembly instructions that have to be universally understood. The complexity of set-up is to be kept to a minimum. In most contexts in which staff structures are used, internet is available. In many contexts, it is difficult or impossible to access machinery and tools to set up the structure. Electricity is available in most contexts in which staff structures are used, but experience has pointed out that the need for powered tools for set-up is to be avoided. Storing of instructions, tools, repair materials, spare parts etc. is commonly done by UNICEF, as is labelling of the structure.
Functionality	UNICEF uses staff structures to provide living and office space to its staff in areas where such is not locally available. A staff structure can provide living space for 2 members of staff, and office space for 4. UNICEF at times makes staff structures available to implementing partners. In many instances staff structures are deployed to stressful contexts. For UNICEF's staff to perform its duties, it is primordial that both living and office space is comfortable. Staff structures need to provide a sufficient level of privacy and security, and offer a good internal climate (temperature, ventilation, illumination (day and night) and acoustics). Furniture is to be ergonomic. Staff structures for offices and living, and all storage furniture in them, need to be lockable, to protect the privacy and property of UNICEF's staff, as well as the confidentiality of documents. Staff structures for offices are at times interconnected and moved to reflect changing needs and ways of working.
Disability	Staff structures of UNICEF may be used by people living with disabilities
Maintenance and durability	

Maintenance	As staff structures are used in emergency responses, the need for maintenance and repairs is to be kept to a minimum. Cleaning, maintenance and repairs are commonly done by a local team contracted by UNICEF, using generic products and tools.
Durability	Staff structures are typically used in the first months of a response to emergencies, after which the emergency seizes to exist and recovery starts, and staff structures are replaced by more durable solutions or staff moves to formal buildings. A staff structure thus needs to keep its full functionality for at least 24 months, and preferable for at least 36 months, to allow for leeway in the start of recovery, replacement by more durable solutions, or move to formal buildings.
Post operational management	
Re-use	Staff structures currently in use are commonly, after operations, handed over to implementing partners or local authorities who continue to use them as office or living space, or for other purposes. Staff structures are also, at times, refitted, repacked and re-stored for later use, or moved to another operation or location.
Transformation, re-use of pieces	When staff structures allow for it, they are at times transformed / fitted for longer use, or elements of the staff structures are used for different purposes in the local context.
Discarding	In most contexts, there is little system in place to deal with staff structures that can no longer be used. Local recycling industries do not always operate to the highest standards of environmental safety and people's safety and health.
Cost	
Purchase cost	Emergency responses in which staff structures are used are often large scale with limited funding available. The purchase cost of the staff structure is kept as low as possible to enable a maximum allocation of funding to programs.
Cost – quality balance	International procurement implies stock management and transport which represent a cost. The quality of the staff structure is to be in balance with the purchase cost and this additional cost.
Transport cost	The urgency of deploying staff structures often requires transport by air. The cost of that is reduced by minimizing packed weight and volume.
Cost of operating	The cost of climate conditioning can be reduced by a better climate suitability of staff structures. Minimal maintenance, replacement and repair needs also reduce the operational cost.
Timeliness	
Timeliness	Staff structures are commonly used in emergency settings, where timely delivery of services to affected populations can be life-saving. The capacity of UNICEF to provide such services is dependent on the timely availability of its staff to set up operations and begin programs. Impacting negatively on the timely availability of staff structures are mostly mobilisation and transport. While the time required for international transport can be reasonably controlled for most contexts, complications in onward transport lead, at times, to a lesser timeliness. At times, the complexity of set-up leads to a lesser timeliness.

Requirements

Attribute	Minimum performance	Ideal performance
Supply Chain Requirements		
Weight	The total weight of one structure, including packaging, is below 500kg	The total weight of one structure, including packaging, is below 250kg
Volume	The total volume of one structure, including packaging, is below $4m^3$	The total volume of one structure, including packaging, is below $2m^3$
Number of structures to fit in one container	The number of packed structures that can fit in respectively a 20foot and 40foot DC CTN container is 8 and 16	The number of packed structures that can fit in respectively a 20foot and 40foot DC CTN container is 16 and 32
Packaging	The packaging of the structure: • is made up of boxes or packages that allow for easy transport, with limited risk for damages, fitting in standard container sizes and allow for easy stacking up to 3 meters high • the weight of one package remains below 120kg • allows for comfortable onward transport by hand, taking into account a maximum carrying weight per person of 20kg • is easily opened and closed again • allows for storage in wet and humid conditions for a period of 5 years and exposure to rain during transport, without compromising content • attains not less than 17kN edge crush resistance with minimum 60% remaining with 90% humidity at a temperature of 40°C • if made of wood, it has undergone the treatment, marking and documentation required to meet the specifications described in ISPM No.15 Guidelines for Regulating Wood Packaging Material in International Trade	
Labelling	The packaging, and all the parts it may be composed of, is labelled: • all sides of the packaging or the boxes are fitted with a label, in a way that resists water, humidity and direct sunlight, containing the following information: indication of top; protect from water; UNICEF name and material number; Purchase Order Number; production date; type and size of structure if applicable; number of boxes (i.e. 1 of 3, 2 of 3 etc.); gross weight and cubic measurement; manufacturers' batch/ serial number; the website link to the suppliers' instructions • Of this information, the following is readable from 5m distance with 2000lux: UNICEF name and material number, type and size of structure, number of box (i.e. 1 of 3, 2 of 3 etc.) • The label has size A5 (210x148mm)	

	• Each individual package has a barcode, in accordance with barcode standard Data Matrix, height minimum 15mm, waterproof	
Storage life	The structure has a storage life of 3 years in all environmental conditions	The structure has a storage life of 5 years in environmental conditions
Product requirements		
Internal space	• The internal useable surface of the structure is 12 to 15m², allowing office space for 4 people or living space for 2 people • The internal height of the structure is 2.4m for an internal surface of minimum 12m² • For the living accommodation a partition is to be provided to provide privacy	
Modularity	None	Different units can be interlinked to form larger spaces
Foundation	The structure can be safely and securely installed directly on a horizontal, but not flattened, site without concrete slab	
Floor	The structure has an integrated hard floor, with internal finishing for use as an office or living space, anti-skid, anti-trip, easy to clean, light color	
Windows	The structure has 2 windows that: • are securely integrated in the walls of the structure • have three layers: transparent window, opaque blinder and mosquito / dust net • can be opened, and securely closed from the inside	
Door	The structure has at least one door that: • is securely integrated in the walls of the structure • has a minimum width of 1.2m and height of 2m • can be securely locked from the inside as well as the outside, keys in 4 copies • Consider needs of people living with disabilities	
Shade net	A shade net is included with the structure, installed on top of the structure to realize the greatest possible heat reduction inside	
Ventilation	A non-powered ventilation system is installed to realize the required ventilation rate without opening of windows or door	
Climate control	A HVAC system 12.000 BTU is included, and the structure is fitted with the necessary ins- and outs to easily and securely install it	
Electrical system	• The electrical system and HVAC system includes: o 4 double sockets, Type F, 16 A o 1 single socket, Type F, 16 A, waterproof, external, close to door o 2 light fixtures • The following load is to be carried by the electrical system: o for living: 12.000 BTU HVAC system; 1 electric kettle; 1 microwave; 3 400 lumen lamps; 2 laptops o for office: 12.000 BTU HVAC system; 1 electric kettle; 3 400 lumen lamps; 4 laptops; 1 radio	

Furniture	A set of furniture is included for living OR for office use: • For living: 2 beds, minimum size 2m by 0.9m, mattress minimum 10 cm thickness; 2 wardrobes, minimum volume 0.4m³, lockable, keys in 3 copies; 2 foldable chairs with seat height approximately 0.5m, with backrest, without armrests; 2 foldable tables, approx. 75cm high, surface 0.3 by 0.6m • For office: 4 desks, approx. 75cm high, surface 0.7m by 1m; 6 foldable chairs with seat height approximately 0.5m, with; backrest, without armrests, suited for office work; 2 cupboards, minimum volume 0.4m³, lockable, keys in 3 copies; 4 pedestal drawers, fitting under desks, lockable, keys in 3 copies	
Labelling	• The structure is labelled on the front and back with the UNICEF logo, minimum height 50cm, Pantone 17-4540 TCX on Pantone 11-0601 TCX, at approximate height 1.6m, using loose labels that are attached to the gables with Velcro or similar • An additional logo is included, minimum height 1.2m, Pantone 17-4540 TCX on Pantone 11-0601 TCX, that can be attached to the roof and/or onto the shading net, with Velcro or similar • The manufacturer's batch traceability label is fixed to the structure, on the inside, close to the door	
Repair kit	If the proposed structure is vulnerable to minor damages with reference to the Use Cases, a repair kit is included containing all materials and tools to make minor repairs	
Storage box	A sturdy box is included to store all instructions, tools, re-packing items and repair kit, resistant to humidity, and labeled for its content	
Performance requirements		
Durability	The structure, and all of its elements, is designed to have a minimum durability of 24 months in the conditions as laid out under the Use Case, including full waterproofing, UV resistance and flame retardance	The structure, and all of its elements, is designed to have a minimum durability of 36 months in the conditions as laid out under the Use Case, including full waterproofing, UV resistance and flame retardance
Structural performance	• The structure resists a wind load of 80 km/h for the broadest range of soil conditions • The structure resists a snow load of 300N/m²	• The structure resists a wind load of 120 km/h for the broadest range of soil conditions • The structure resists a snow load of 300N/m²
Internal climate performance	The structure reaches the following benchmark performances for the broadest possible range of contexts and for the least need for energy consumption: • internal illumination of 500 lux • ventilation rate of 5l/s per person • 22°C internal temperature And is designed for acoustic comfort	
User requirements		

Set-up complexity	• Set-up is to large extent self-explanatory • Set-up does not require a high level of technical skill or knowledge • The number and complexity of tools required for set-up is limited, only generic tools are required • The number of small, loose elements that make up the structure is limited • All elements that make up the structure are coded in accordance with the graphic content list and step-by-step instructions	• Set-up is to large extend self-explanatory • Set-up does not require any technical skill or knowledge • Only hand-held non-powered and generic tools are required for set-up • There are no small, loose pieces part of the structure • All elements that make up the structure are coded in accordance with the graphic content list and step-by-step instructions • The weight to be handled during set-up, for one person, does not exceed 40kg
Set-up team	The structure can be set up by a minimally trained team of 4	The structure can be set up by an untrained team of 2
Set-up time	The structure can be set up and made ready for use, with a minimally trained team, within a time span of 120min.	The structure can be set up and made ready for use, with an untrained team, within a time span of 60min
Set-up tools	All tools necessary to set-up the structure are included, are qualitative and generic, kept in a sturdy packaging marked for its content	
Maintenance and cleaning	The structure and its elements are designed for minimal and easy maintenance and cleaning with common products inside and out	
Furniture	• The furniture, for living OR office use, can be assembled by one person within 60min, with minimum and generic tools that are included • The furniture is ergonomic and easy to handle, clean and maintain with common products	
Operating windows	The windows can be easily closed, opened and blinded from the inside	
Operating door(s)	The door(s) is easily closed and locked from the inside as well as the outside, it opens outwards. Needs of people living with disabilities are taken into account	
Placement of sockets and switches	Sockets and switches are placed in logical places for both living and office use, taking into account needs of people living with disabilities	
Safety of materials	No materials are used that may pose a risk to the user's safety or health	
Re-packing	The structure is designed to be easily packed up again, moved and installed in another location	
Information requirements		

Instructions	• The individual packages include a laminated waterproof copy of instructions, contained in 1 waterproof holder that can withstand frequent handling, and is marked for its content • The link to the suppliers' instructions is printed waterproof on the holder, letter height minimum 2cm • Instructions are made up primarily out of drawings describing pertinent points step-by-step • Text in instructions is in English, French and Arabic • Instructions are A4 size • A content list of elements that make up the structure is included • Instructions include a link to the instructions and set-up video on the supplier's website
Content of instructions	Instructions address: • <u>Safe siting and site preparation:</u> structure to be sited on a stable site, distant from unstable slopes, distant from fire sources; how to set up the structure on a concrete slab and when no concrete slab is available; organize drainage around structure; orient doors away from prevailing wind; recommendation to install in a shadowed area in hot climates • <u>Set-up:</u> graphic content list of all elements, with indication of number of pieces for each element that makes up the structure; Section on installation of the electrical system: linking up to power source, grounding; section on assembling furniture; hanging of a fire extinguisher or other such items and labels; installation of shade net; link to instructional set-up video on suppliers' website • <u>Maintenance, operating and repair:</u> Indications for cleaning without compromising the quality of elements; Handling and maintenance of windows and door, furniture and all other elements that require such • <u>The electrical system instructions:</u> A plan of the electrical system with indication of distribution board, wiring, sockets, lighting points, switches; indication of the loads the system is designed for; the codes to which the electrical system adheres; indications for maintenance, replacements and repairs as they are likely to occur during 24 months use of the structure • <u>Repair instructions:</u> Any repair kit included is accompanied by repair instructions that clearly lay out how repairs are to be undertaken • <u>Internal organization instructions:</u> schemes of how the internal space can be organized as a living quarter for 2 persons and an office space for 4 persons, with inclusion of furniture, sockets, light points, switches, fire extinguisher and air conditioning • <u>Re-packing instructions:</u> graphic content list, with indication of number of pieces for each element; step-by-step graphic re-packing instructions

	• Safe disposal instructions: low-tech and low-cost options for safe disposal and re-use options; safety precautions and equipment required for safe disposal and re-use	
Commercialization requirements		
Documentation of conformity	The structure comes with documentation of compliance to all of the above requirements, including testing results and reference to standards commonly used in the sector. Particularly the behavior under wind is documented (preferably by means of tunnel testing), and the internal climate that is created in different context conditions. Variations are estimated / quantified.	
Children's Rights and Business Principles	Adherence to UNICEF's Children's Rights and Business Principles	
Environmental management system	Proposed timelines for ISO14001 certification	ISO 14001:2015 certified
Quality management system	Proposed timelines for ISO9001 certification	ISO 9001:2015 certified

References

www.unicef.org

Children's Rights and Business Principles

Temporary Structures: Currently Available Products. UNICEF Supply Division. August 2014.

www.iso.org: ISO standards

STANAG 2895:

STANAG-2895 MMS Extreme Climatic Conditions and Derived Conditions for Use in Defining Design / Test Criteria for NATO Forces Material. Reference: AC / 310-D / 62. Dated March 1987 (Edition 1). Military Agency for Standardization, NATO.

www.astm.org

ASTM-D2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System). American Society for Testing and Materials.