



UN Nordic Procurement seminar January 2021





**NATURAL
DISASTERS**



**MAN MADE
CRISES**

RESCUE →
Hours

RECOVERY →
Months to some years

RECONSTRUCTION
Several years

**Bridging the gap between
immediate response &
reconstruction.**

**BASIC NEEDS, HEALTH, SAFETY,
ENABLING CAPABILITIES**

Comprehensive
ROM
Solutions

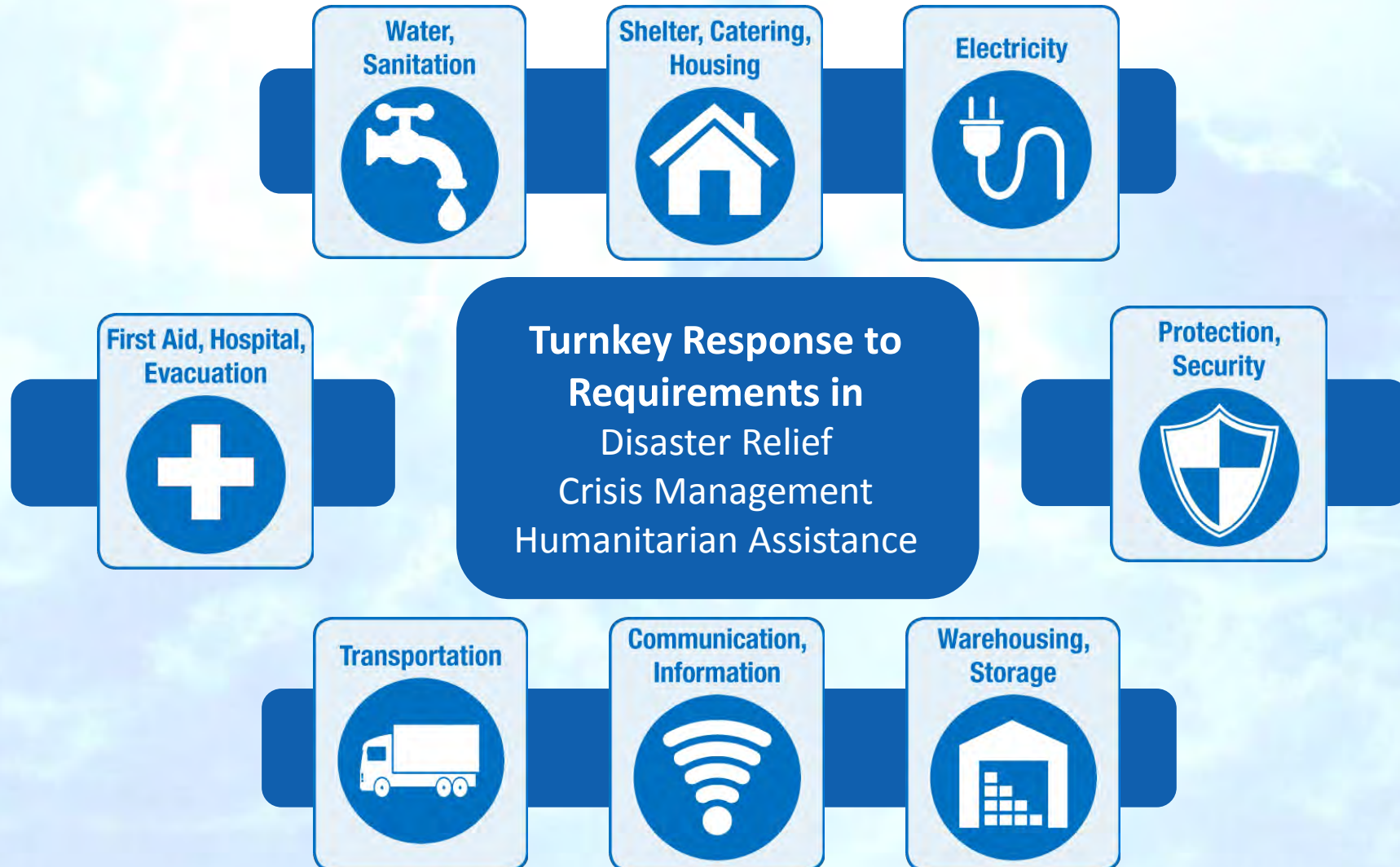
Water

Security



ResCamp Modules[®]

Fostering Recovery





ResCamp Modules[®]

Fostering Recovery

SUOMI
FINLAND



ROM WASH Box



ROM Camp Water supply



ROM Clewer Camp WWT



ROM Camp Hybrid power



***SMART & HIGH ECO TECH BY
COMPRENDUM LTD & PARTNERS***

ResCamp Modules®

Fostering Recovery

SUOMI
FINLAND



ROM Village water supply



ROM SolaRO Mobile Water



ROM Mini WASH



ROM Health Station



ROM Field Hospital



ROM Camp / Site Security



ROM Protect



ROM Pop-Up School



SMART & HIGH ECO TECH BY COMPRENDUM LTD & PARTNERS



Camp Water Management, Sanitation and Hygiene



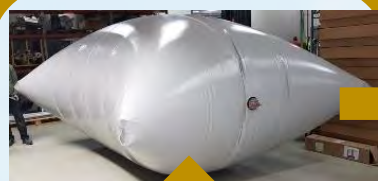
Camp Water supply



WASH Box



RAW WATER
COLLECTION &
STORAGE (1,5-5 M³)



Pre
Filter

Raw
(Source)
water

Borehole, River,
Lake or Sea

WATER PURIFICATION (RO)

SolaRO 300 PRO



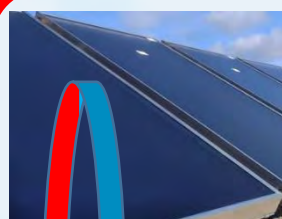
190-300 L/H



RESIDUAL
WATER

CLEAN WATER
STORAGE (0,5 -2 M³)

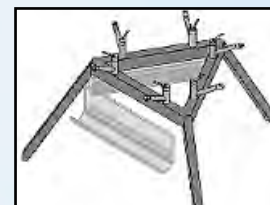
WATER HEATING w.
THERMAL COLLECTOR



150 -300 L

WASH BOX WATER CONSUMERS

TAP STATIONS



HAND WASH SINKS



TOILET BIDET
SHOWERS



SHOWERS



GREY WATER TREATMENT



WATER COLLECTION, PURIFICATION & MANAGEMENT SYSTEM

Developed for Swedish Civil
Contingencies Agency (MSB)



Myndigheten för
samhällsskydd
och beredskap

RAW WATER COLLECTION &
STORAGE (4 x 5 = 20 M³)

Raw
(Source)
Water:
Well
Borehole
Lake
River
Pond

Pre-Filtering

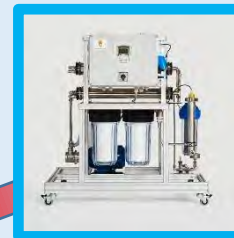


5 M³
/Day

10 M³
/Day

WATER PURIFICATION STATION

SolarRO PRO 300



SolarUV



Residual
water

DRINKING WATER
STORAGE (2 M³)
& DISTRIBUTION



Drinking
water

200 L/h

CONNECTORS
EN 14420-7, 1"
Camlock
Quick Release

HYGIENE WATER
STORAGE (3 M³)
& DISTRIBUTION



Hygiene
water

1000 L/h

System
presentation

YouTube



SOLAR WATER
SOLUTIONS



ROM Village water supply



Village water supply systems

by Comprendum Ltd in co-operation with Solarwater Solutions Ltd

Proposed for UNDP Uzbekistan 2020



<https://youtu.be/rt1e9JNeRzg>

Capacity range 6 – 80 m³ / day (24 hours)



SOLAR WATER
SOLUTIONS

The SolaRO system principle

1. Sea, Well, lake or river water intake
2. Raw/feed water tank
3. SolaRO reverse osmosis unit
4. Solar panels / battery / power grid
5. Clean water tank
6. Pressurized water to users
7. Brine (contains no chemicals)

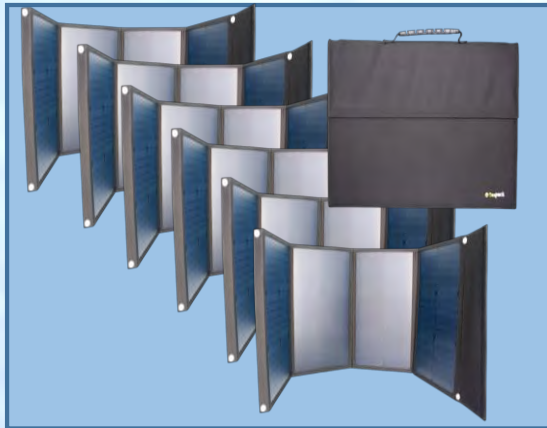
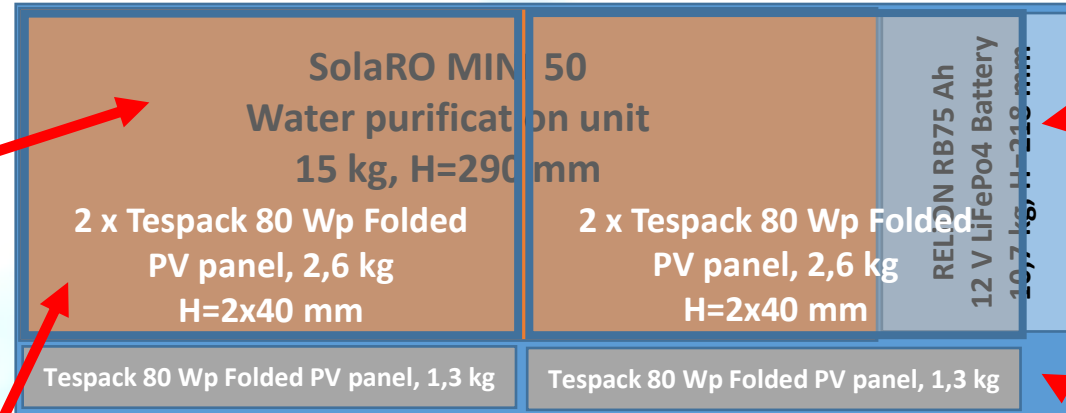




ROM - SolaRO Mobile Water 50 – LiFePO₄



SOLAR WATER
SOLUTIONS



**Clean water with reverse osmosis
filtering 50 liters/hour**

**Package total
weight
Ca 46 kg**

**Zarges K424 XC Mobile Box
910 x 350 x H 380 mm,
9,5 kg, 1,5 mm aluminium
Max massa 50 kg**



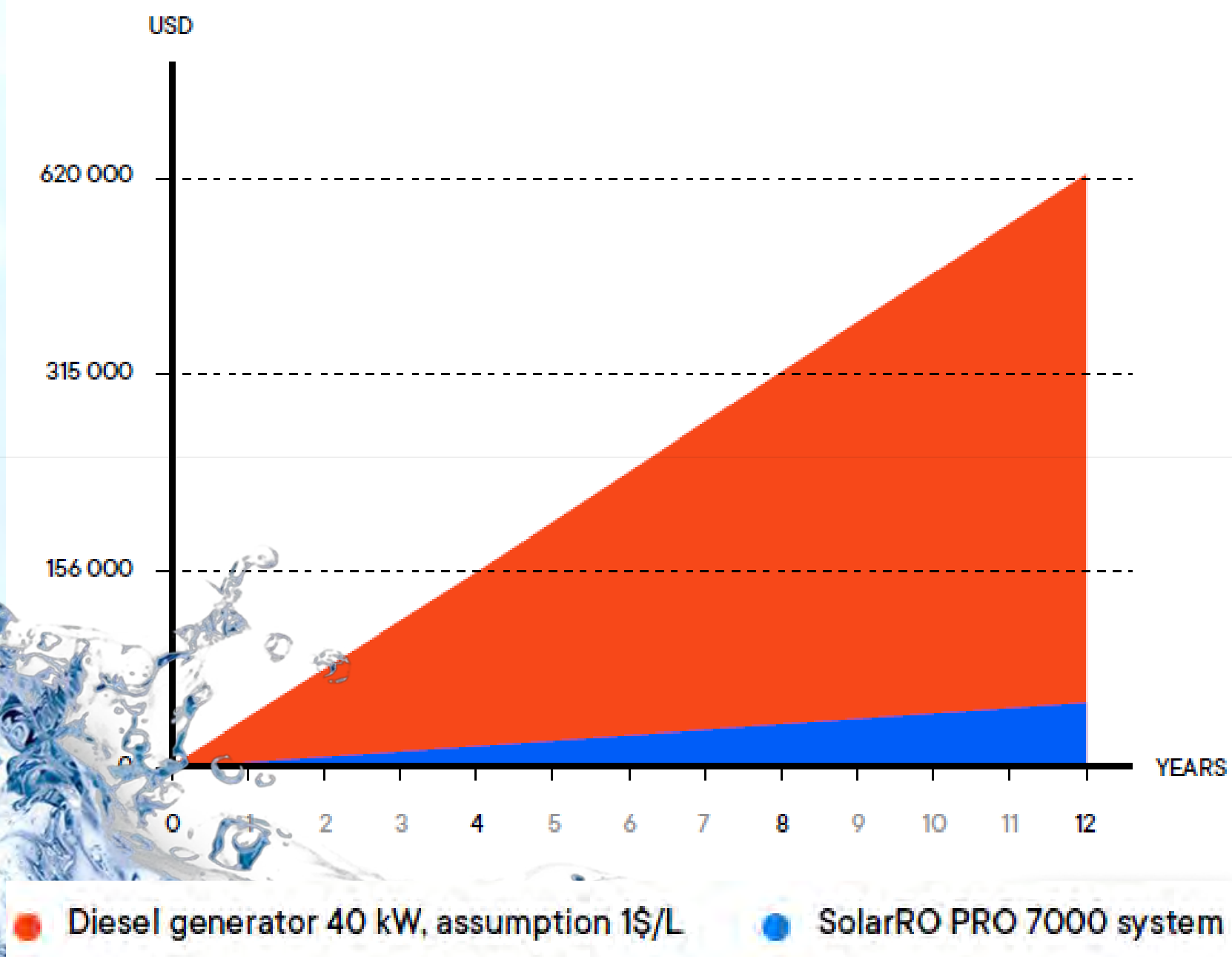
**Proposed for UNOPS Brazil ,
Brazilian Fire department 2020**





SOLAR WATER
SOLUTIONS

Water,
Sanitation



FINNISH
WATER
FORUM



info@fwf.fi
www.fwf.fi



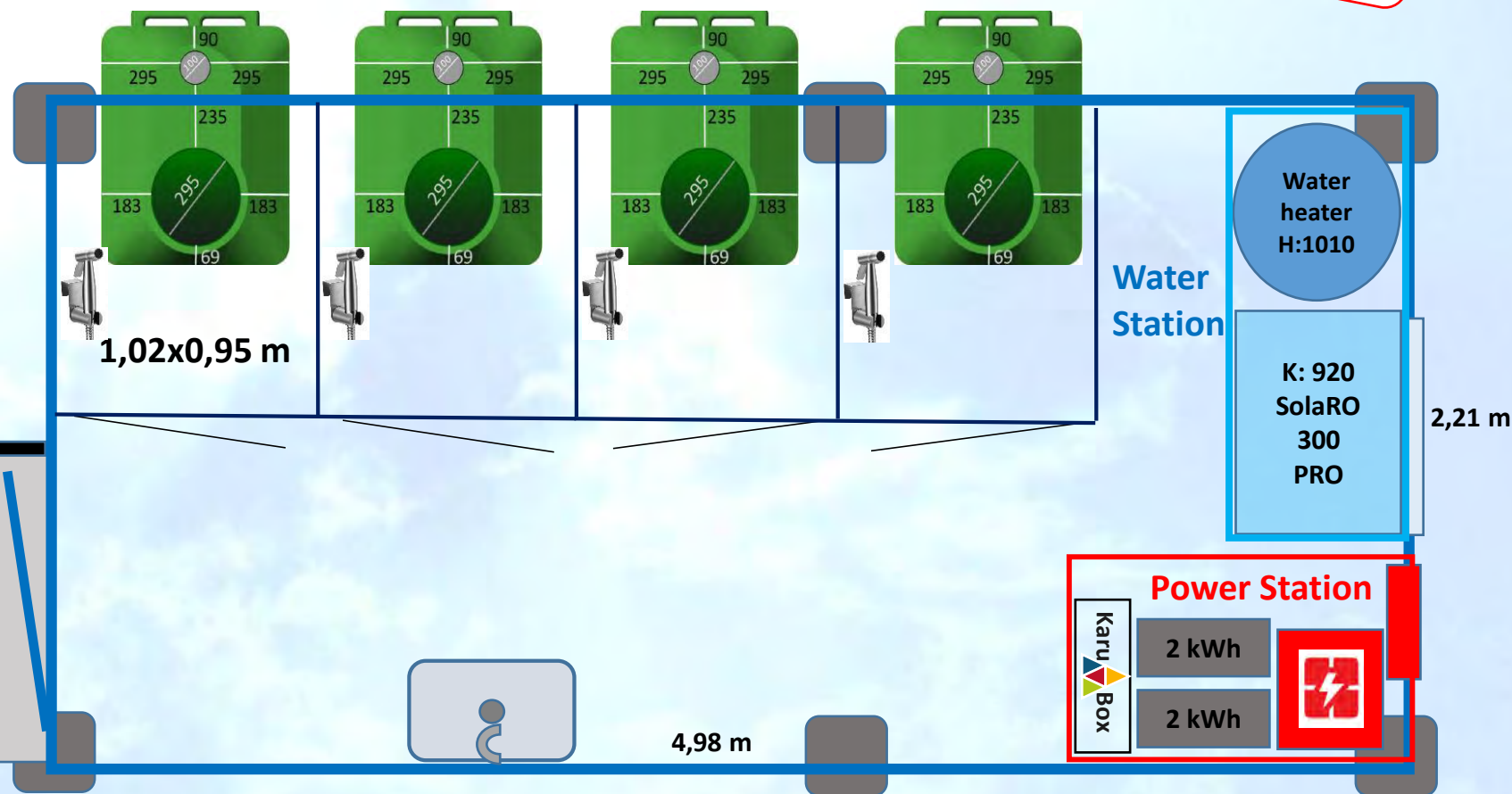
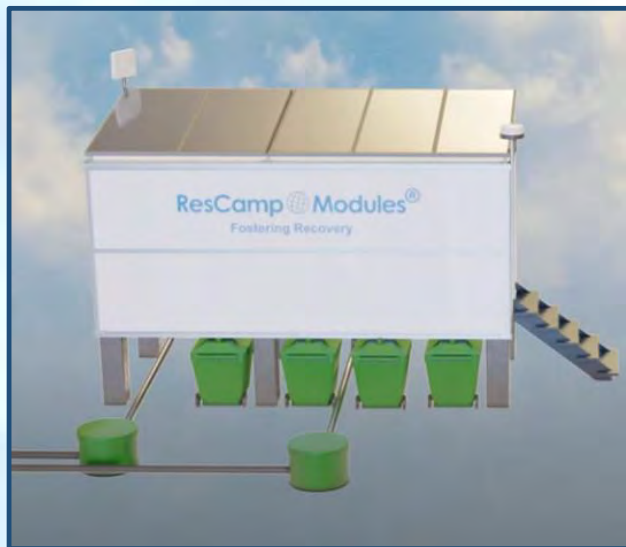
FINNISH
WATER
FORUM



WASH Box Toilet



Proposed Field Pilot for
UN peace operations



System
presentation

YouTube

Partners:

Comprendum



RAPID ARMOR
SHELTER SYSTEM

Ovzon

VBASELIGHT
PRIME DESIGN SWEDEN

102
FEENIKS

Intlog Oy

Pikkuvihreä

SOLAR WATER
SOLUTIONS

MAVA TECH
NBC DECONTAMINATION

Karugrid

rehome

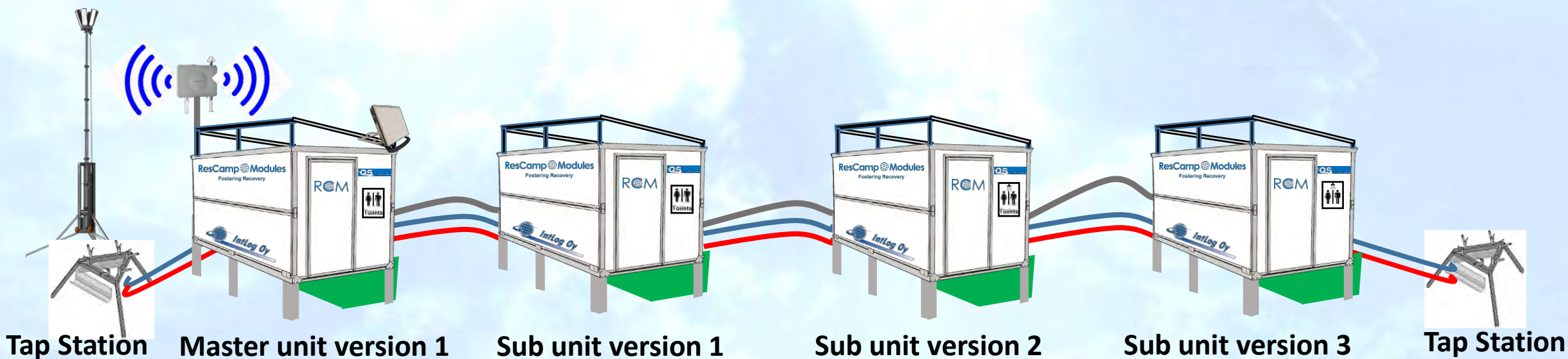
102
FEENIKS



WASH Box



**Smart & High Eco Tech Sanitation solutions scalable for 100 –2000+ persons needs. Example package for 2000 persons
Delivered in ONE (1) standard 20 feet Sea container**



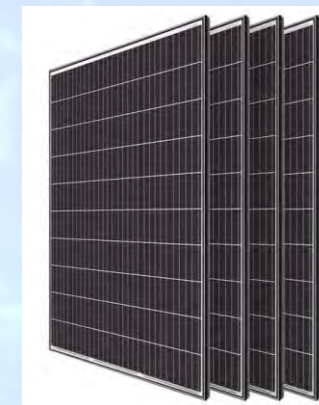
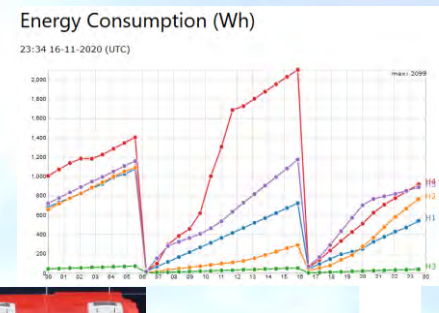
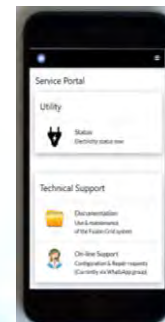


**Regional mobile
network,
local cloud
services, IoT hub**

Digital services
smart control
edge computing
local cloud access

Impact: Electricity for the local community

local grid extension, local operation, electricity market, local community & business engagement



**Li-ion
Battery
power**

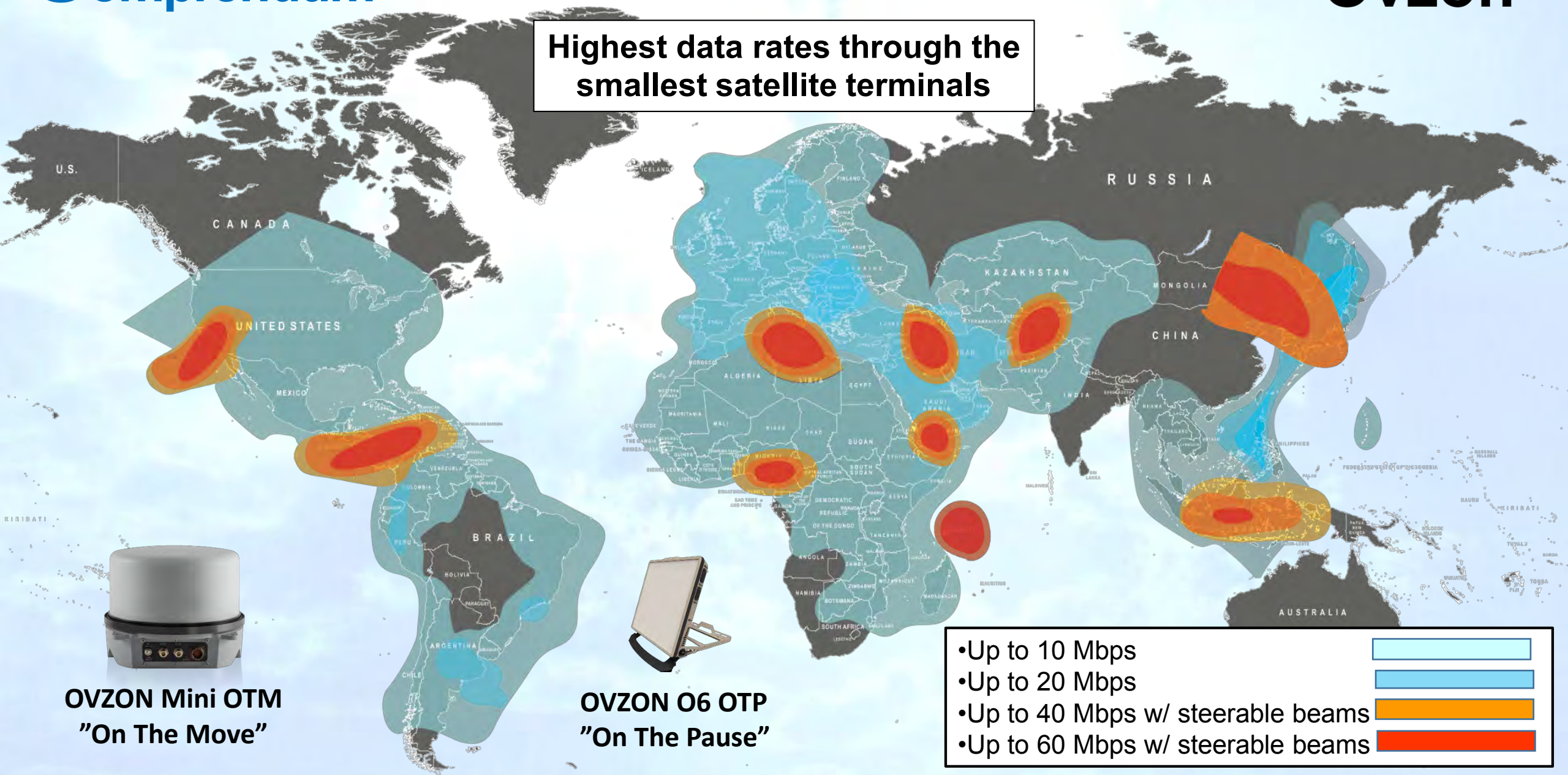
**Solar
electricity**



Powered by **Karugrid** 

© 2020 Karugrid Oy, confidential

Highest data rates through the smallest satellite terminals



OVZON Mini OTM

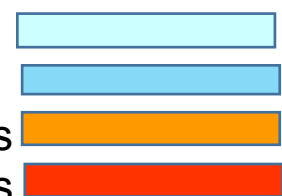
"On The Move"



OVZON O6 OTP

"On The Pause"

- Up to 10 Mbps
- Up to 20 Mbps
- Up to 40 Mbps w/ steerable beams
- Up to 60 Mbps w/ steerable beams





ROM MiniWASH



Light, deployable water, sanitation and hygiene solution

Water Treatment

Water Storage & Distribution

Ablution Facilities

Source water storage



Waterpurification units



Portable SolaRO Mini 50



Portable Solar UV



Solar UV Wallmount



Pumps



Optional equipment

Extra pumps, Water heating unit, Solar Energy & Panel Packs, Baselifighting



Water sources:

- Rivers
- Creeks
- Ponds
- Boreholes
- Wells
- Sea

May be polluted by sewage or animals.

← Cleaned water piping
← Source water piping

Clean water tanks

Foldable

Tactical tanks 1-2 m3

Storage/Transport bladders 3-5 m3



Water tap station



Light field shower

Shower pack + Shower tent



Field latrine

Green Toilet 120 + Latrine tent + Hand Sanitizer



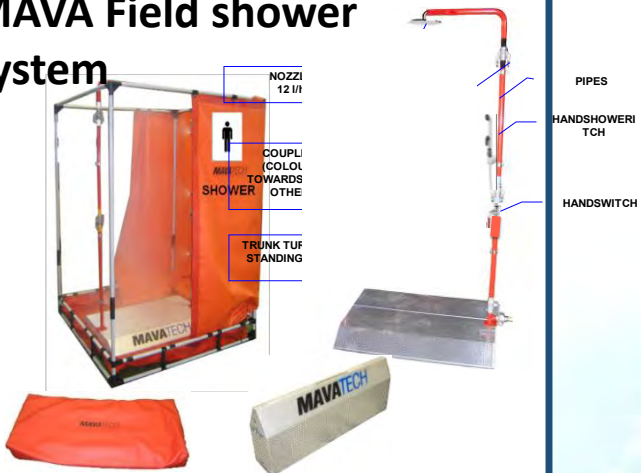
Developed and proposed for UNHCR 2017



RCM Hygiene



MAVA Field shower system



Pikku Vihreä

MAVATECH
NBC DECONTAMINATION

rehome

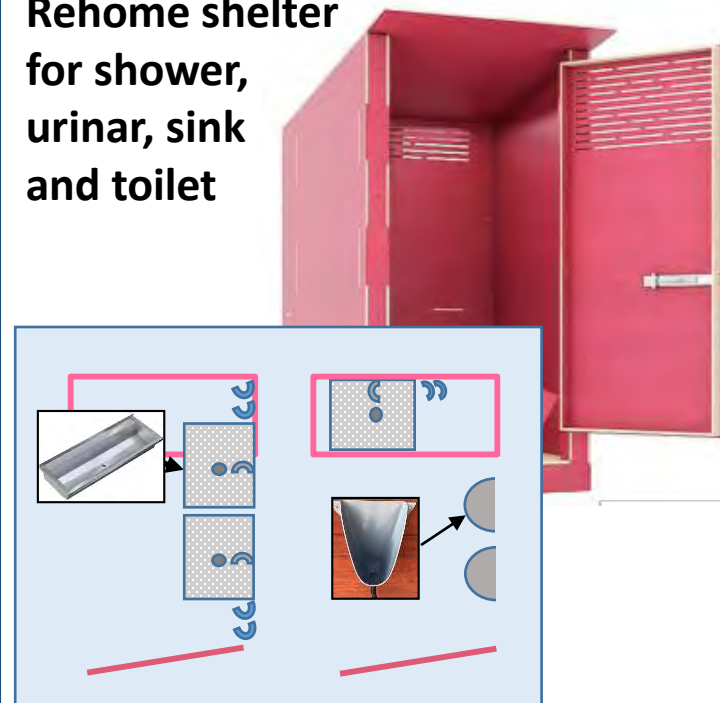
Rehome composting dry field toilet system



RCM Tap & Urinoar stations



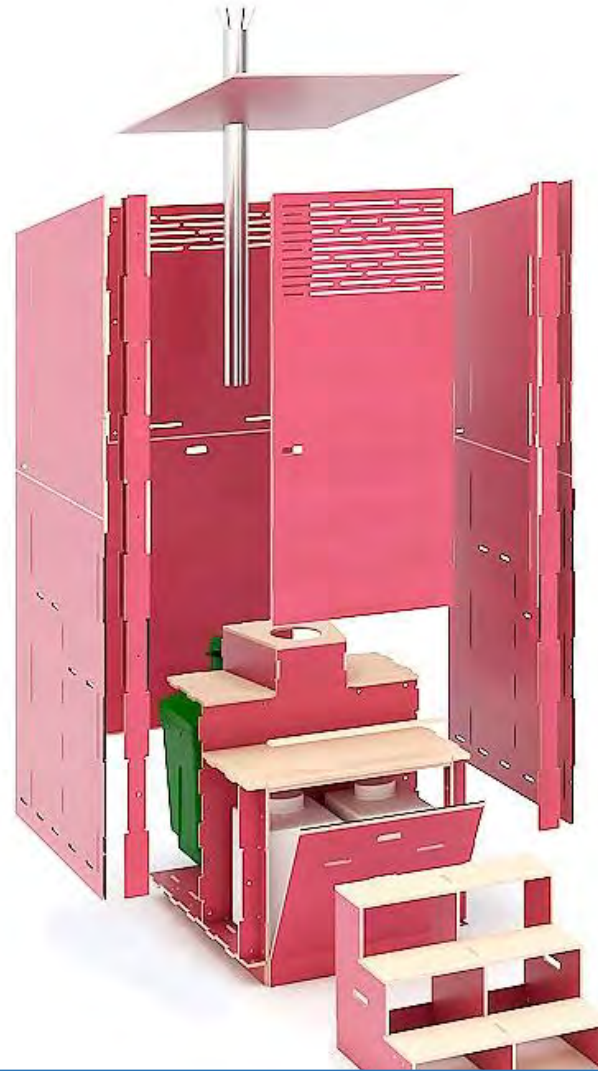
Rehome shelter for shower, urinar, sink and toilet





Rehome Green Toilet 330 shelter

ResCamp Modules®
Fostering Recovery



LAMK

Lahden ammattikorkeakoulu
Lahti University of Applied Sciences

rehome

Pikku Vihreä



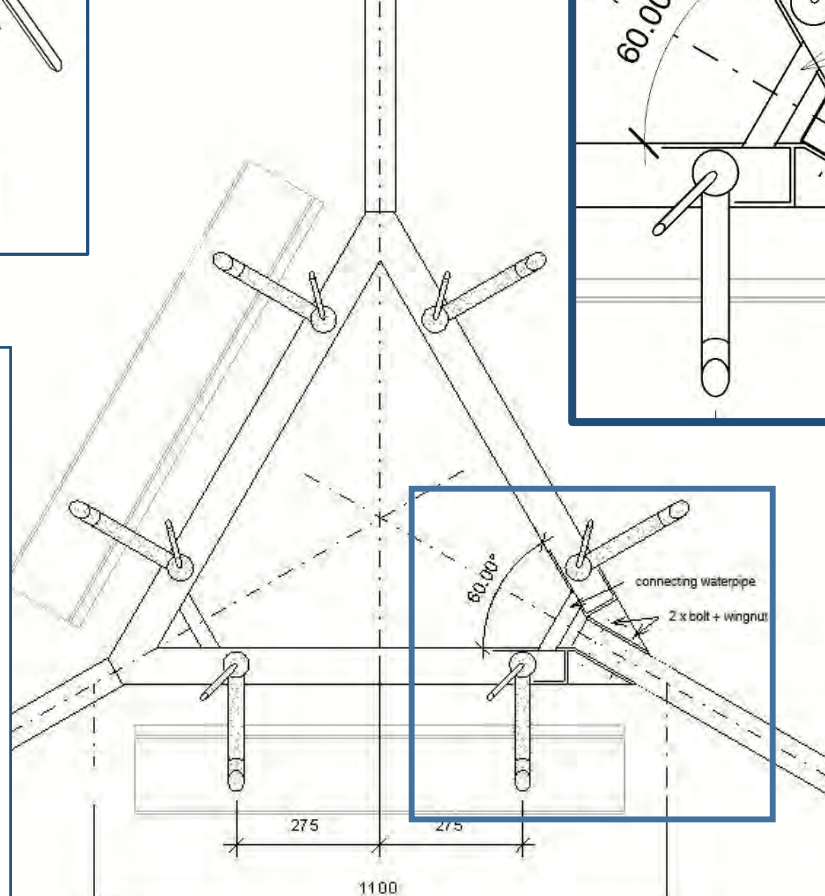
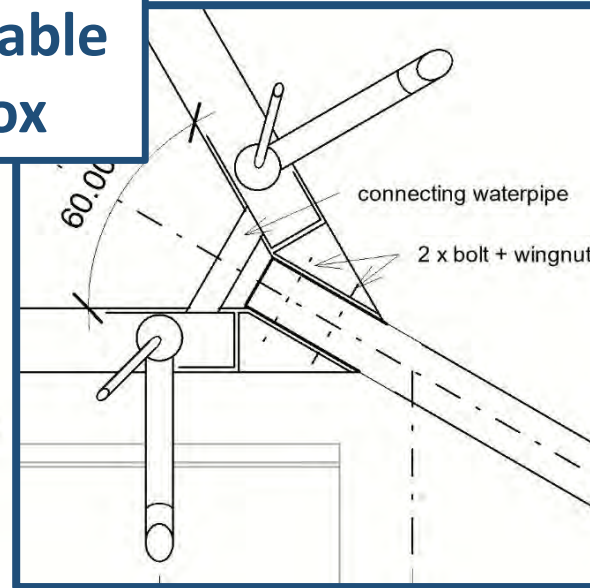
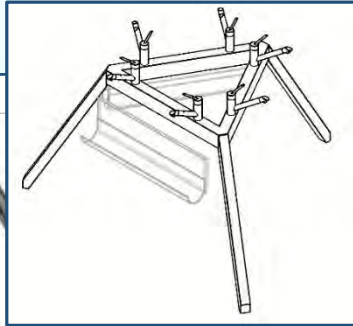
KORVENRANTA

Intelligent woodworking.

ResCamp Modules - Tap or Urinal station

ResCamp Modules®
Fostering Recovery

Easy transportable
in a carry box



MAVATECH
NBC DECONTAMINATION

Pikku Vihreä

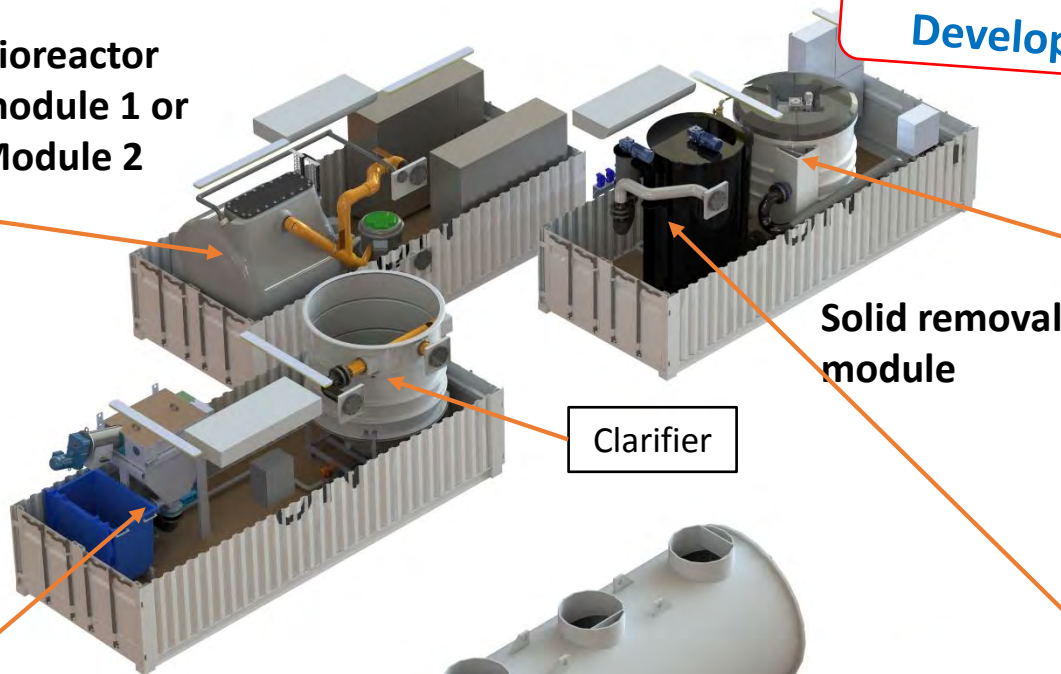
Clewer RBBR Wastewater Treatment System (WWTS) for UN 200 – 400 persons camp system – Proposal to field pilot and proof of concept

*Proposed Field Pilot for UN peace operations,
Developed to meet UN DOS requirements*



Rotating Bed
Biofilm Reactor
(RBBR)

Bioreactor
module 1 or
Module 2



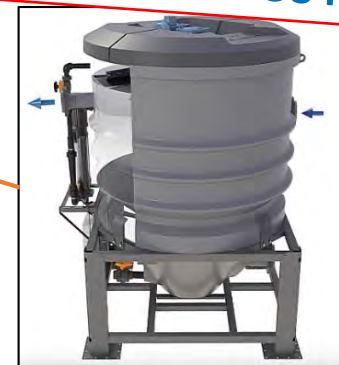
Solid removal
module

Clarifier

Screening
module

Process tank

Lifting
station



Flotation Unit



Chemical
Mixing Station



Pre Screening
Device

System
presentation
You Tube

Process
presentation
You Tube



ROM Camp Hybrid power



Under development to meet UN DOS
upcoming requirements for peace operations

PV Modules



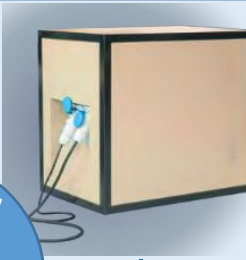
20



8

kW

48/96/
144
kWh



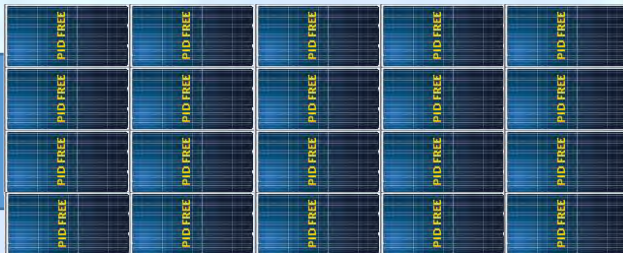
Inverter
& Battery

60/90
/110
kVA



Diesel Generator

Power
station



Power
station

Solar panel array

Power-From-A-Box – 10" S/M/L

SOLNET

Leading provider of Smart Solar solutions.

QS: Quality Space with Quick Setup

- QS saves costs and enviroment
 - Logistics: 7 pcs in 20 ft container
 - Use for multiple times
 - Insulated to diesel in heating and AC
 - No waste left
- High quality space
 - Own patented manufacturing process
 - High quality space in 10 minutes
 - Strong with loadd carrying tested
 - Surfaces easy to clean and disinfect



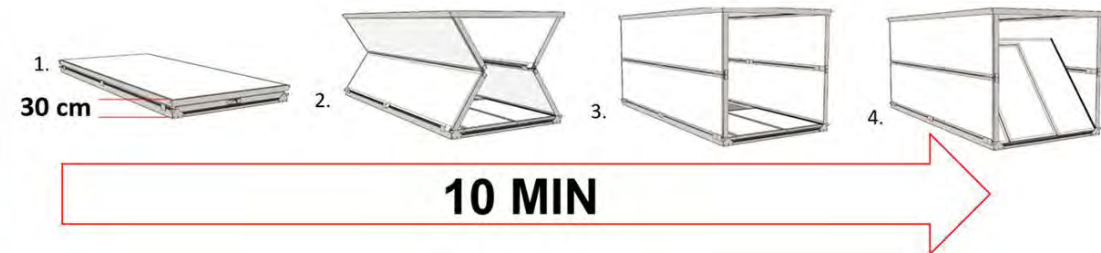
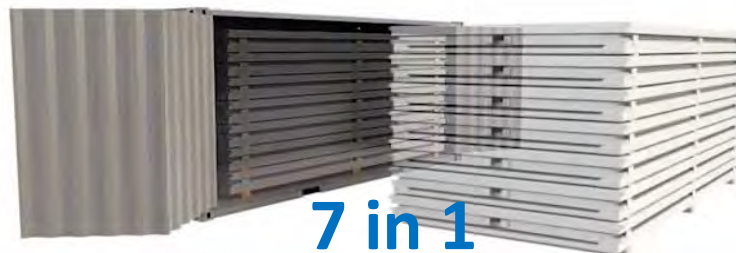
QuickSpace Infectious Disease Screening Clinic



Isolated meeting room
ANTIBACTERIAL



Delivered to South Korea, Sweden and Finland to meet COVID-19 challenges







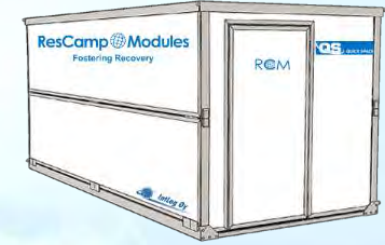
Pikku Vihreä



ROM Field Hospital



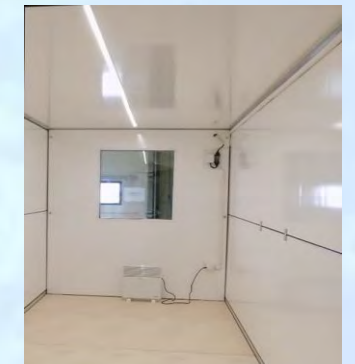
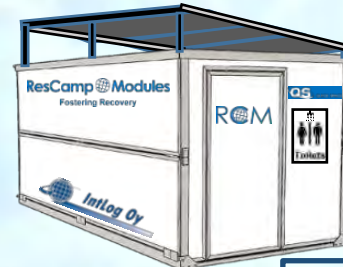
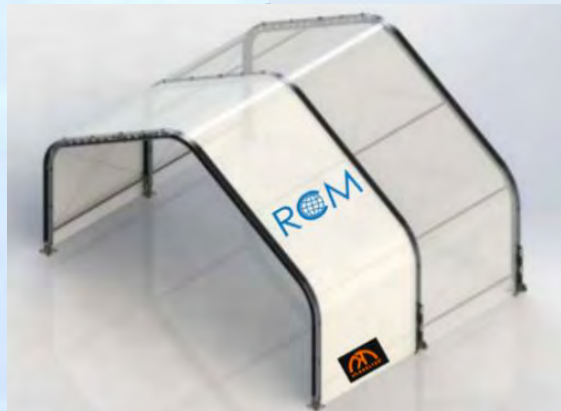
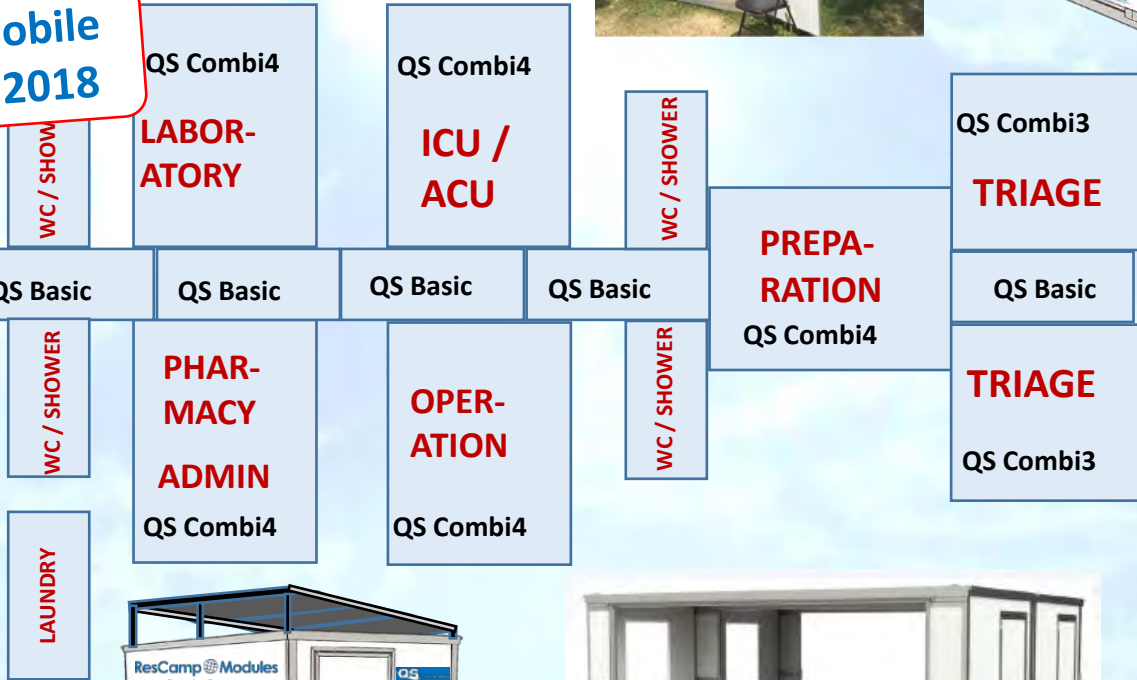
Hospital area 341 m2
Ward 120 / 240 / 360 m2
Sanitation area 55 m2



Developed to meet Save the Children EHU Mobile
Secondary Care Health Facility requirements 2018

WARD
S-Model 6x20 m =120 m2

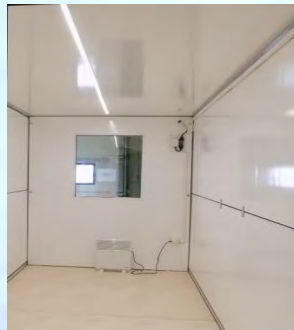
WARD
S-Model 6x20 m =120 m2



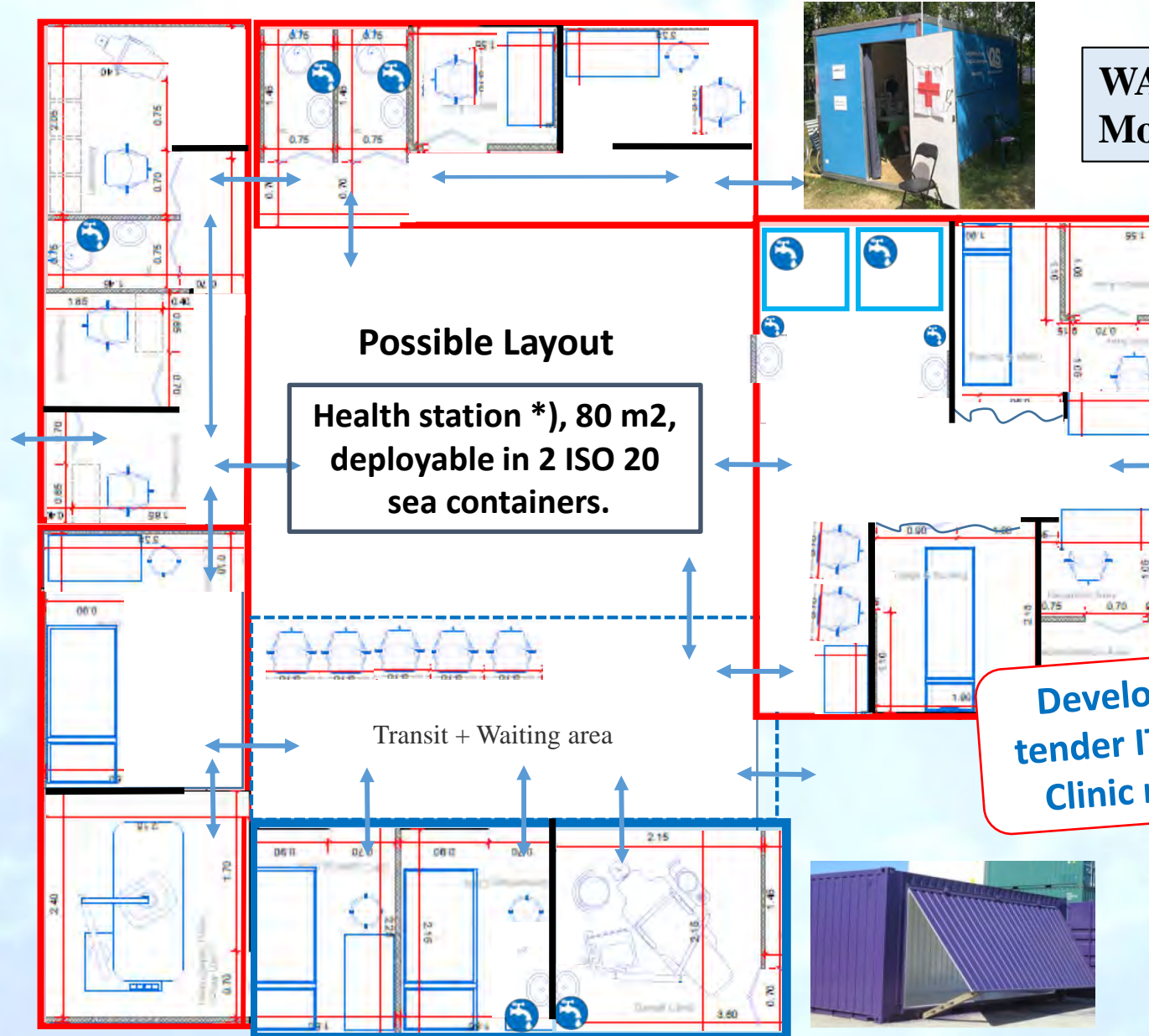
26-31 QuickSpace shelters
5 WASH Box shelters



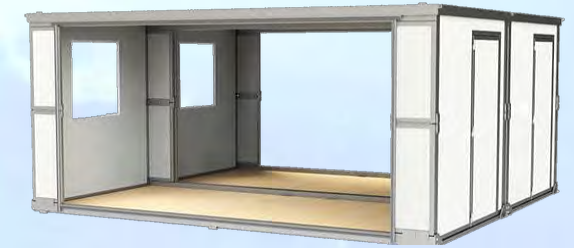
**Laboratory
+ Pharmacy
+ Admin
Module QS**



**General clinic
+ X-ray
Module QS**



**WASH + Admin
Module QS**



**Triage, Module
QS Combi**

**Developed to meet UNOPS
tender ITB/2017/1138 Mobile
Clinic medical requirement**



**Gynecology +
Dental clinic,
Module ISO 20 SO**



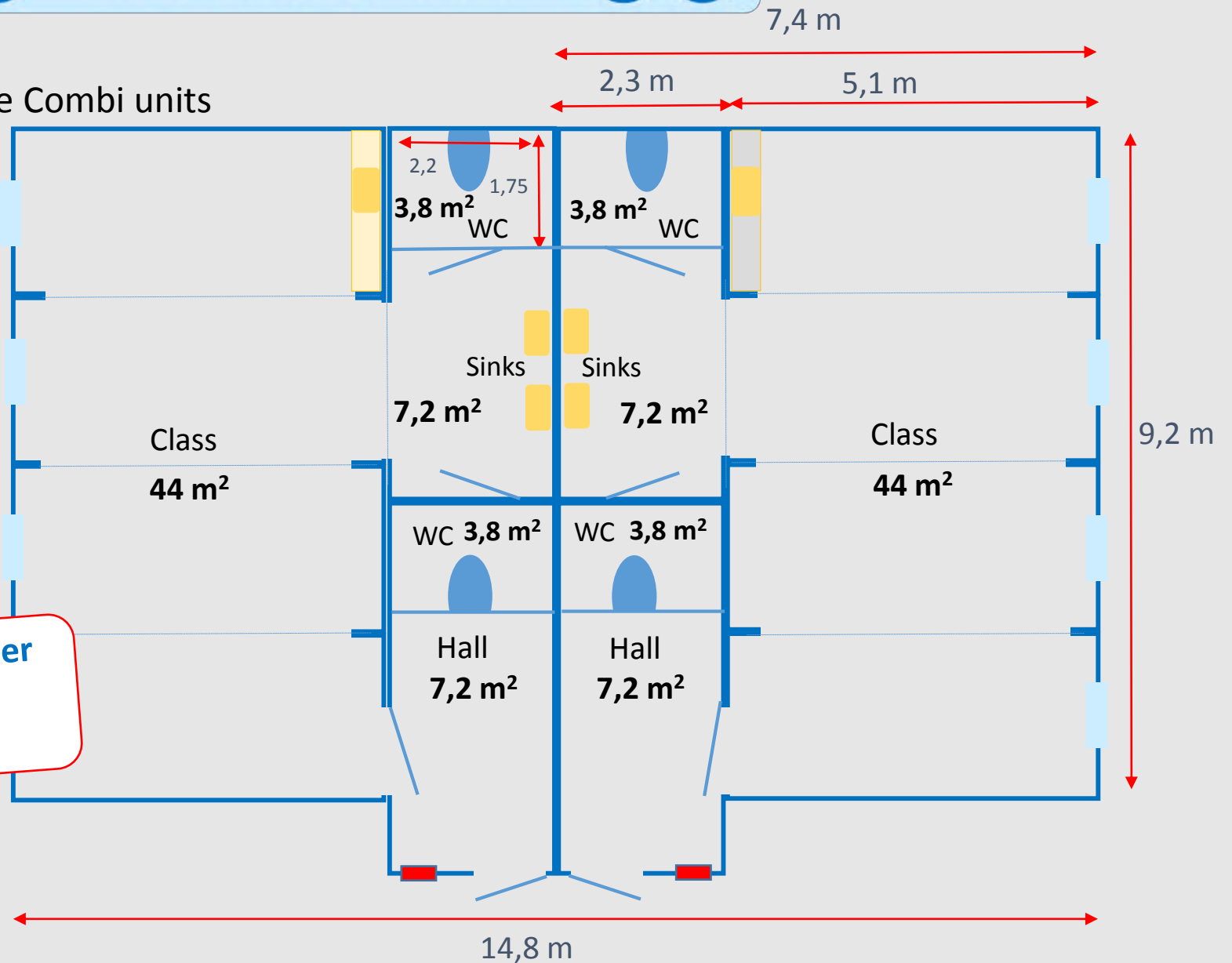
CLASSROOM 132 m²

Based on the use of 12 QuickSpace Combi units
(version with bigger WC:s
for mobility disabled)

UNICEF SCHOOL

LITB-2021-9164378

**Designed to meet UNICEF tender
LITB-2021-9164378. 17 Jan,
Classroom Containers**





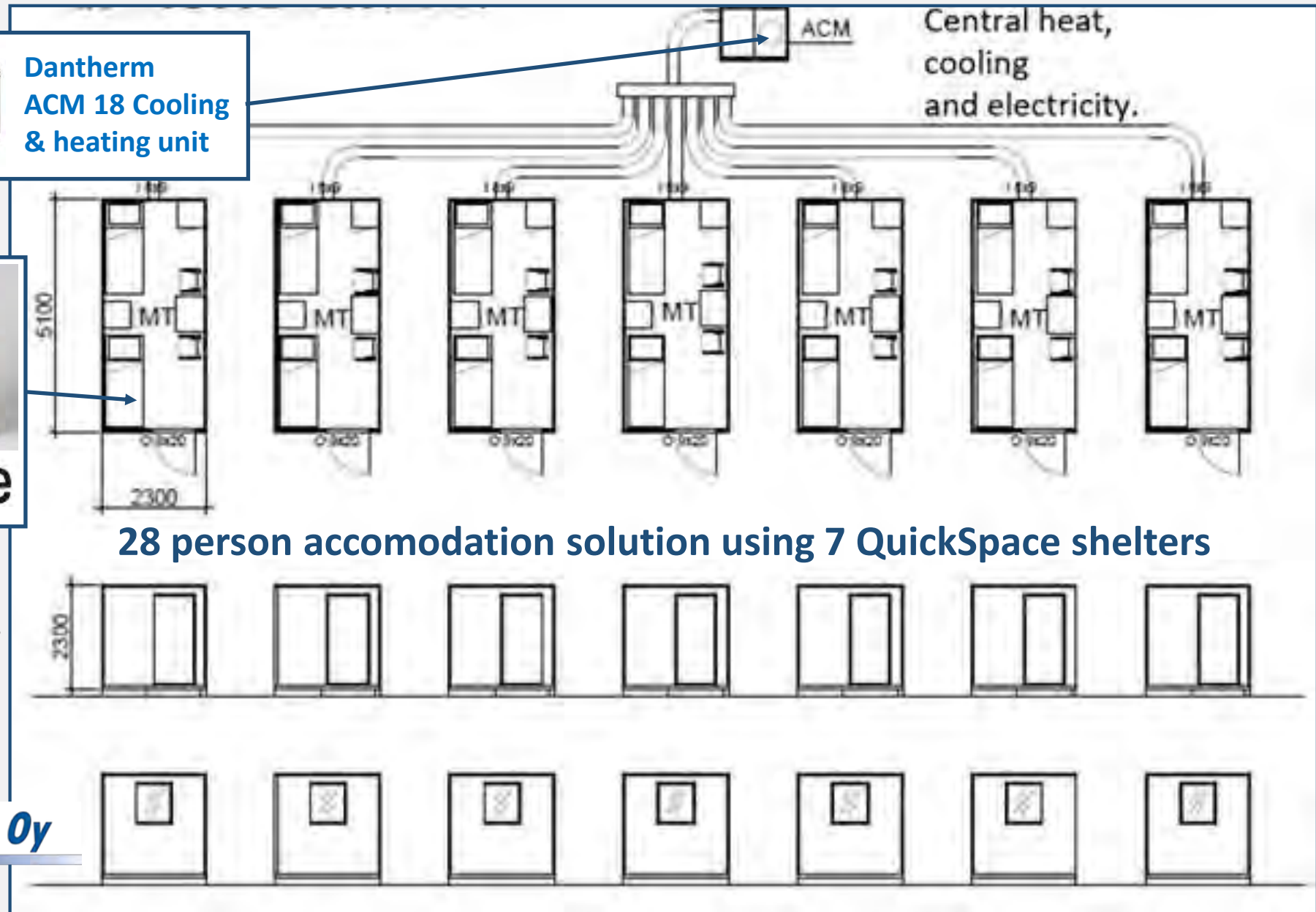
ROM Shelter Box - QuickSpace



Danttherm
ACM 18 Cooling
& heating unit



rehome



Cleamix - A revolutionary decontamination device, built on a new innovation for H_2O_2 vaporisation.

Exceptional portability and affordability of Cleamix opens up new decontamination use cases:

- On-demand decontamination of vehicles (ambulances, buses, aircrafts, trucks)
- Decontamination of field hospitals and equipment at their site of operation
- For rapid disaster response units;



Delivered to South Korea, Sweden and Finland to meet COVID-19 challenges

Very simple to use: Just specify H_2O_2 concentration and duration, and the unit takes care of the rest

System configurations for

- **small decontamination volumes** - cabinets and other enclosed spaces up to 20 m^3 **
- **large volumes** - rooms and vehicles up to 500 m^3 , practical maximum depends on use case
- **very large volumes** - aircraft hangars, complete buildings and other large interior spaces up to 5000 m^3



Highly portable – Smart – Extremely Efficient

Green Toilet 330[®]

Delivered and operational in large
dry sanitation projects in Mongolia,
Uganda and Iceland

GreenToilet
You Tube

- Composting dry toilet system
- No water, no electricity needed for operation
- Low-cost, stand-alone sanitation solution
- Long, proven use history from early 90's
- Absolutely ecological and safe to users, maintenance people, environment



Light durable
plastic
pedestal



Endless capacity with
spare containers





RCM Camp / Site Security



Rapid Deployment Base Lighting System



BASELIGHT
READY FOR TOUGH CHALLENGES

Outdoor Surveillance Camera Unit, OSCU



Multipurpose Observation and Surveillance System LILLY & Energy Harvesting System HAMSTER



SENOP

Rapid Deployment Early Warning System



Easy to deploy
Self sustained
Remotely operated
Rugged

**BASETM
SIREN**



Building blocks for recovery
& temporary needs



**SolarRO water
purification systems**



**Arctic Fox Command
& ICT centers**



**Rotating Bed Biofilm Reactor
Wastewater treatment**



**Solar powered
QuickSpace Shelters**



**Module Space to
combine and assemble**



**Aluminium beamed
Light, KT-shelters**



**Rehome – Toilet
Dry Closets**



ROM Components



SUOMI
FINLAND

Communications



Sensors



Night Vision



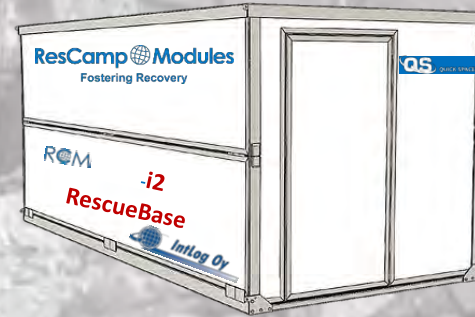
Power



Light



Shelter



Water



Sanitation



Food



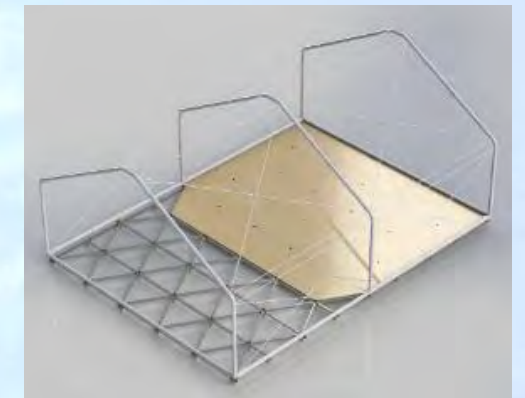
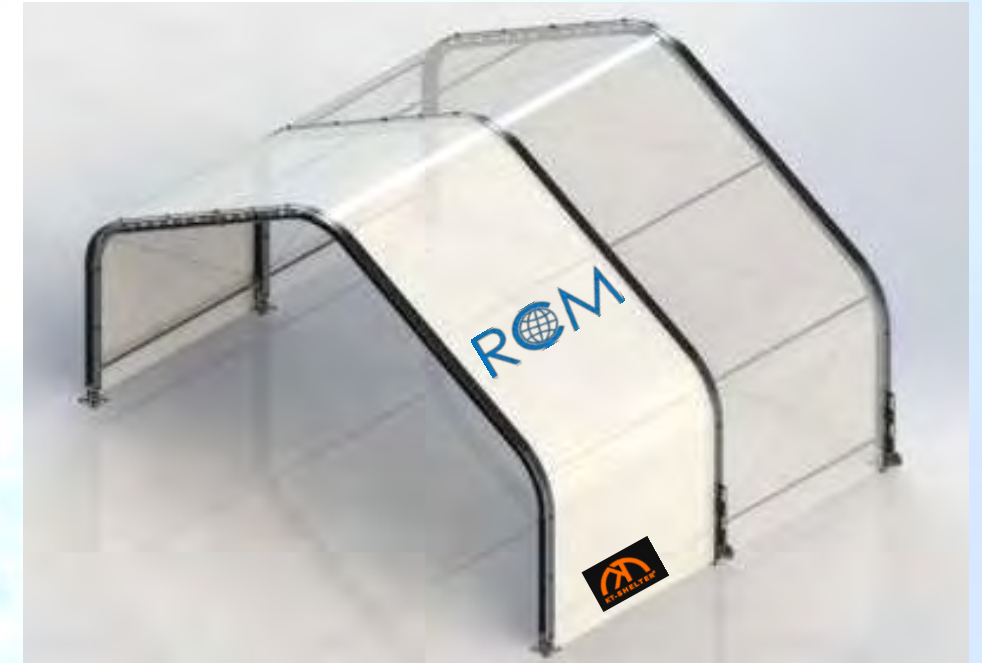
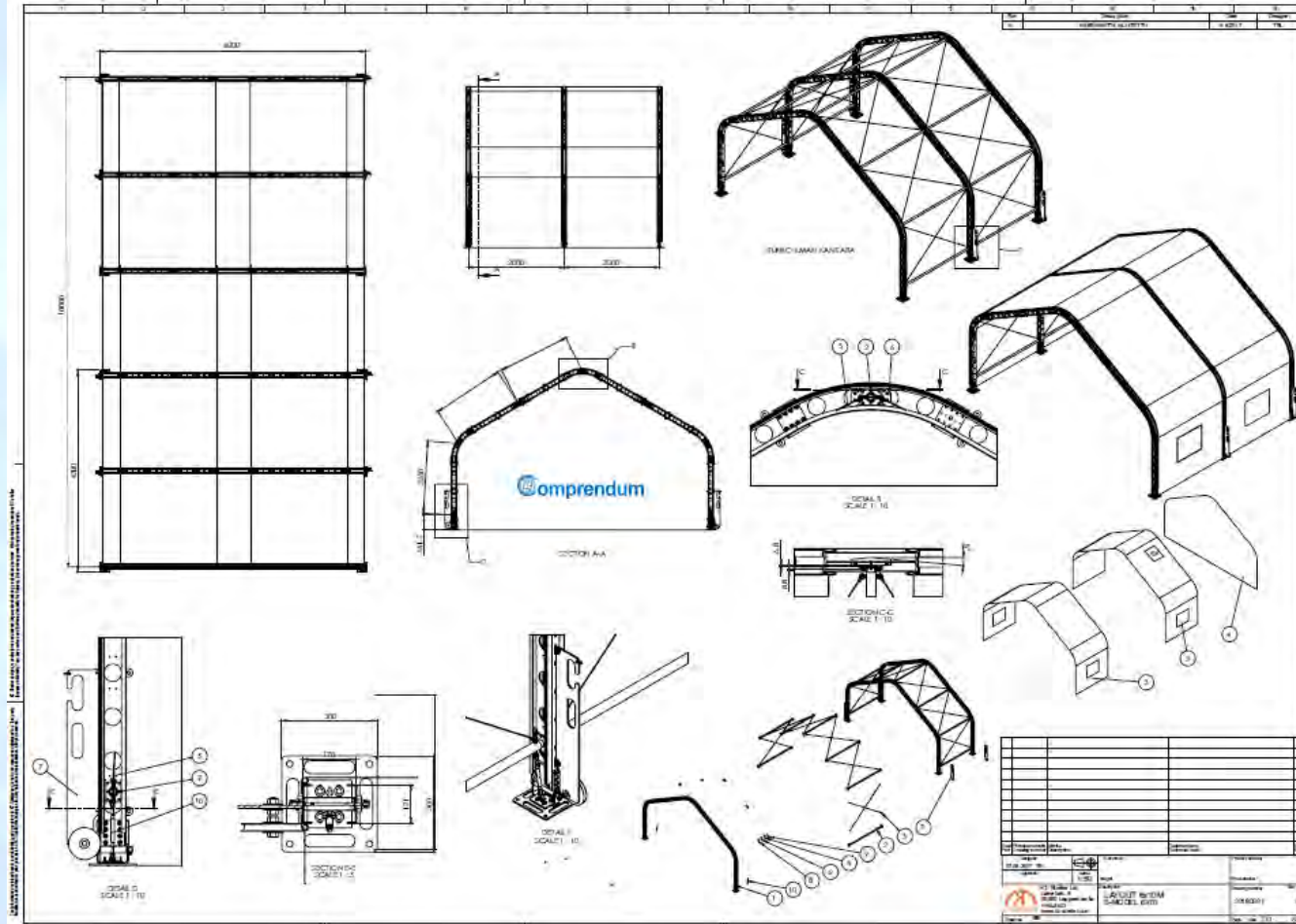
5020 cooker with Gas burner

Disinfection

Rapid production of inexpensive furniture in high volume to meet the criteria of primary needs in temporary housing.

Delivering options for sleeping, storage & privacy for recovery situations!





**S-Model aluminium beamed tent
width 6 meter, lengths 5 – 20 meters**

Optional hard flooring solutions



Connect via Local Smart

Rapid armor protection by

- FY-Composites provide composite solutions, which protect effectively against diverse threats – all tested and proven in the most extreme conditions.
- Latest composite technologies are used for production of armored plates. Composite structure outperform conventional materials.
- Lightweight solutions for personal protection is available - varying armored plates sizes - inserting on any space.
- Armored plates can be installed on Quick Space by attachments - anywhere necessary for personnel safety.

FY-COMPOSITES



RAPID ARMOR®
SHELTER SYSTEM



ROM Catering



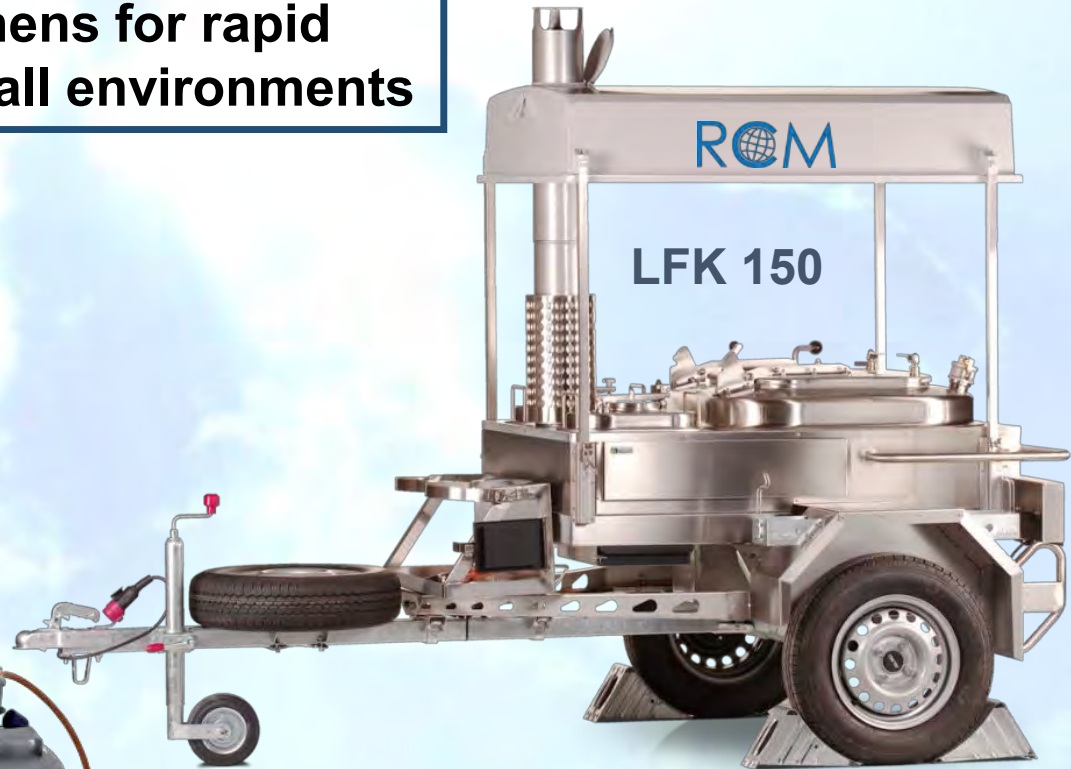
**Mobile kitchens for rapid
deployment in all environments**



FC 75



FC 30



LFK 150