Sutu product manual

Version 1.2

16 December 2015
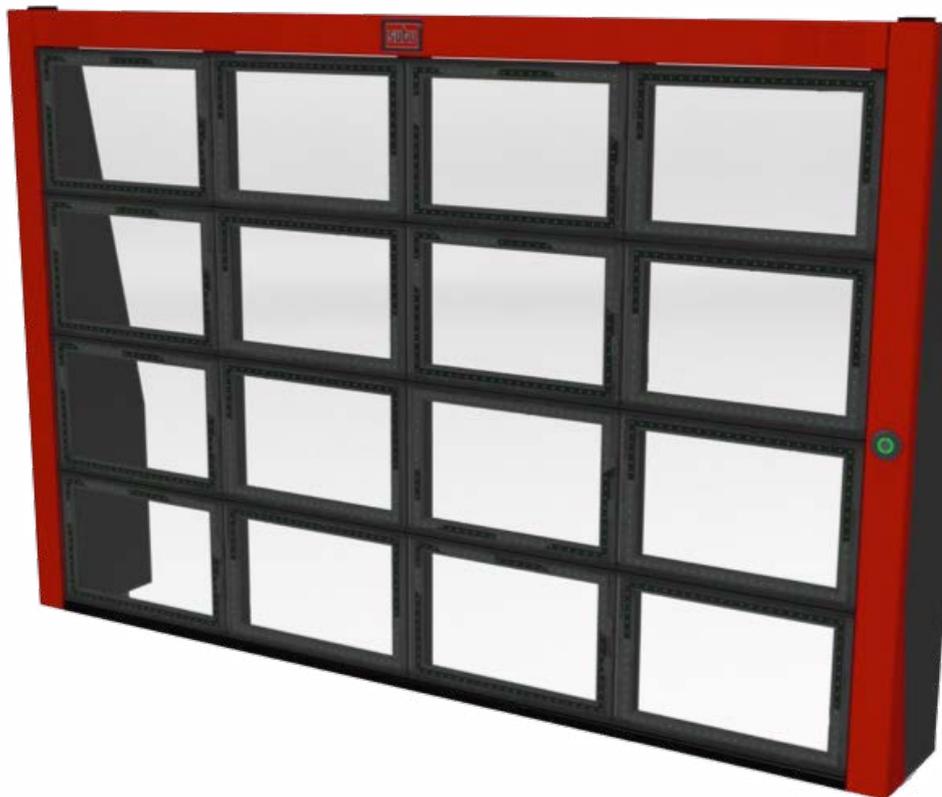
Index

Yalp sports- & play equipment

T: 0031 547 289 410

E: info@yalp.nl

1. What is a Sutu?

The Sutu is an interactive sports wall with sixteen panels that are activated when hit by a ball. Multiple games are pre-installed and can be activated by a simple press on the big button. Audio feedback is available for game explanation and feedback during the game.

The Sutu stimulates children to play actively outside, instead of playing video games indoors. The Sutu is a good mixture of 'computer gaming (excitement, competition and levels)' and outdoor sporting (social development and healthiness).

Key points:
•   Challenging sport product
•   Easy to understand with a low threshold
•   Works with different balls
•   Continuously innovative
•   Multiple children at the same time
•   Fun for kids, teens & adults!
•   Can be used in a professional environment as training equipment

2. Installation outdoor & indoor

This procedure describes the necessary preparations and precautions the customer should know and take care of before installation. For more detailed installation instruction see the Sutu installation manual.

Placing the Sutu outdoor
The Sutu Basic will be delivered as a pre-assembled package, almost ready to play! The package exist of:
- A Sutu 4x4
- 7 anchors
- Mounting material for anchors

When the Sutu is placed outdoors, it is mounted in the ground by anchors that are molded into big blocks of concrete.

De Sutu Basic will be anchored into the ground by seven anchors. To stabilize the Sutu, 5 blocks of concrete with a size of 500 x 400x 800 mm (LxWxH) are necessary (A). The power cable will leave the Sutu under the right column. This cable needs to be at least 60-80 cm deep into the ground.


1. Lifting Sutu of the truck

2. Lifting Sutu above the holes

3. Mounting 7 anchors and pouring the concrete
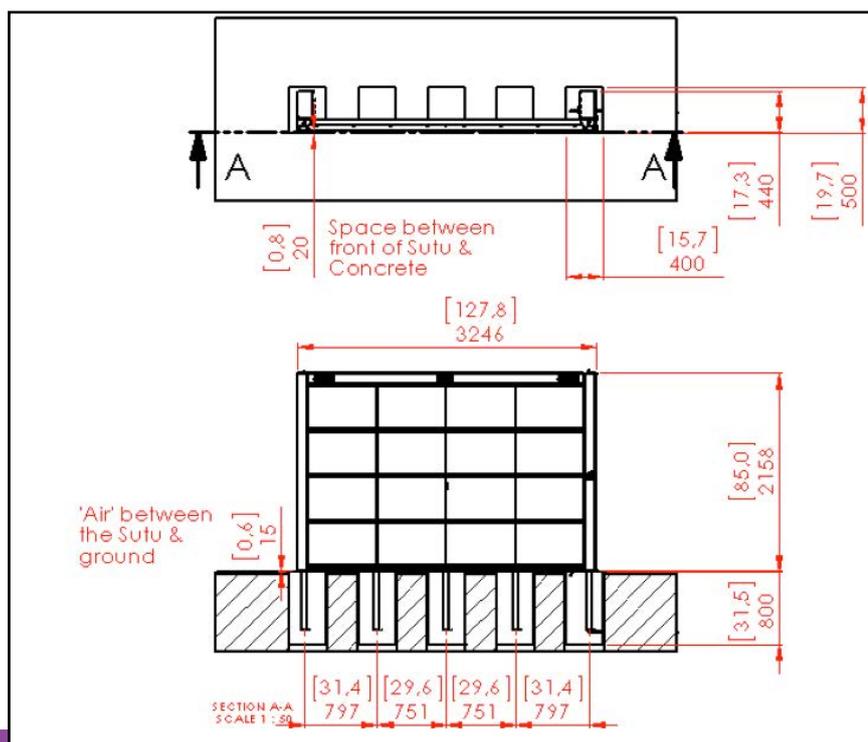
A.   Placed in the ground with 5 concrete blocks.

Placing the Sutu indoor

If concrete blocks aren't possible, chemical anchors can be used according the hole plan(B & C on the next page). The 230 V. cable will leave underneath the right colomn.
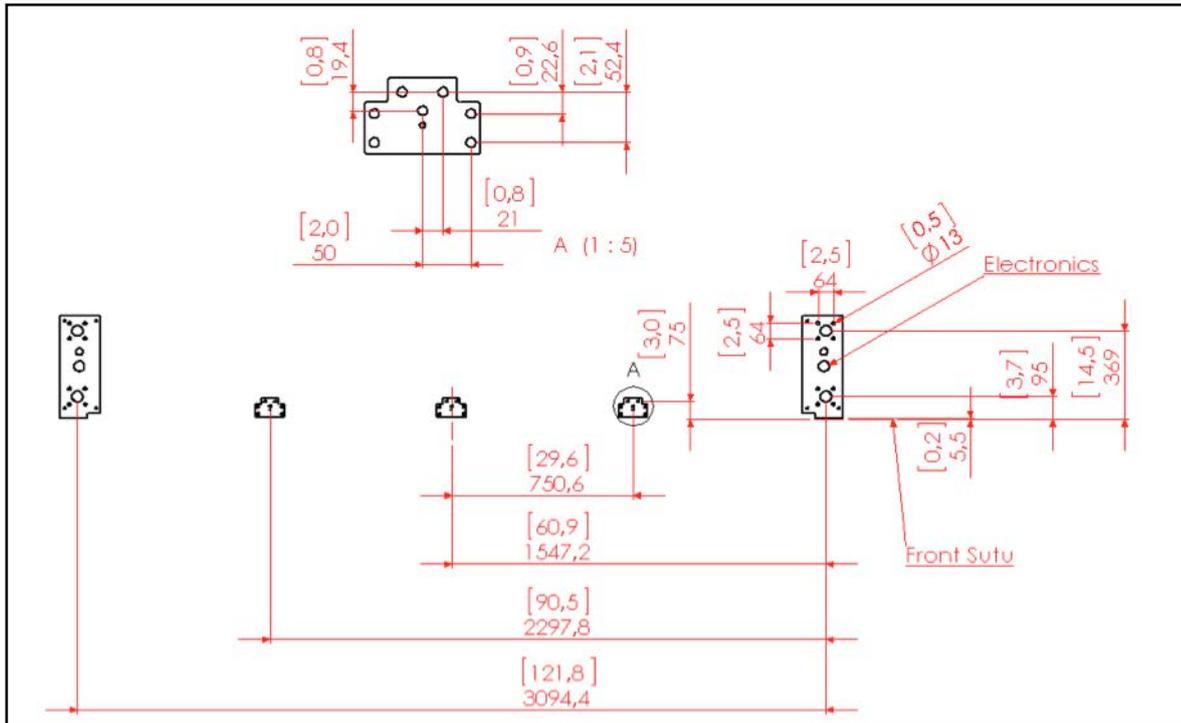
B.   Placed on a surface, hole plan.
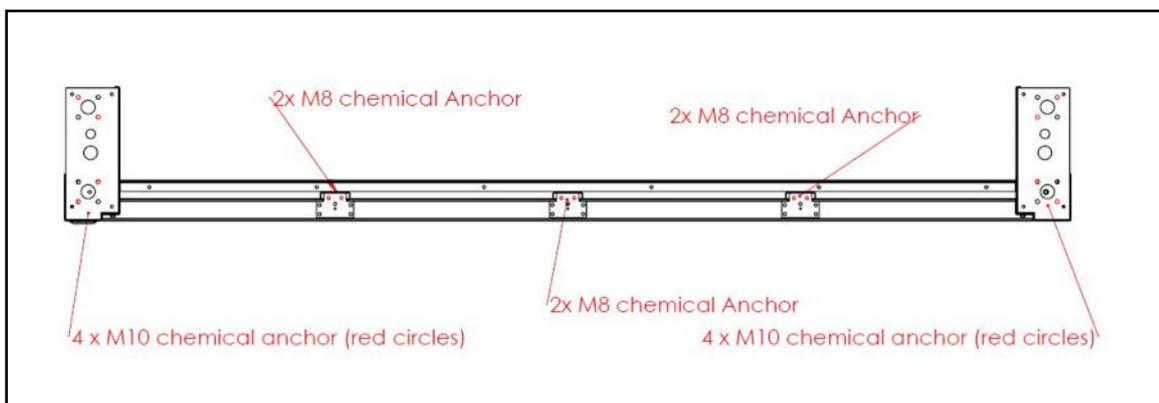
C.   Placed on a surface, anchor plan.

Strength calculations are shown below.

SUTU on concrete floor - strenght calculations

Disclaimer: No rights can be claimed from this calculation. Each situation is different and will require specific calculation. This calculations are based on the assumption the concrete floor is of good quality: No cracks and quality C20/25 to C50/60. Always check this.

Calculation data:

Push height (Dp)	1,5 m	
Push force man	800 N	(Dined2004: man, 20-30jr, P99 = 794N) (to compare: average force of men between 20-30 jaar = 508N) that can push with maximum force at the same time: 5 (3m width Sutu / average shoulder width 60cm)
Persons	5	
Total push force (Fp)	4000 N	Total push force of 5 persons
Mass force Sutu (Fm)	5000 N	400kg + safety factor = 500kg*9,8= app. 5000N
Bolts M12	8 pc	Bolts M12, 4 per Sutu side
Distance M12 bolts (Db)	0,2 m	average distance, when pushed from front

Bolts M8: The Sutu is also mounted on 6 M8 bolts, but these are left out of the calculation. These will add additional strenght to the Sutu for an extra safety margin.

Calculation

$(Dp \times Fp) = (Fb \times Db) + (Fg \times Dg)$

$1,5 \times 4000 = (Fb \times 0,2) + (5000 \times 0,2)$

$6000 = (Fb \times 0,2) + (1000)$

$0,2 \times Fb = 5000$

$Fb = 25000$

Fb = 8 bolts. Necessary force per bolt = 25000 / 8 = 3125N = 3,2kN

Advice:

**Fixed mount:**
Use Fischer chemical anchor bolts FHBII A L M12x120/60 (Fpull = 23,7kN) to mount the Sutu.
Temporary mount:
Use Fisher hammerset anchor EA II. M12x50 (Fpull = 8,5kN) to mount the Sutu.
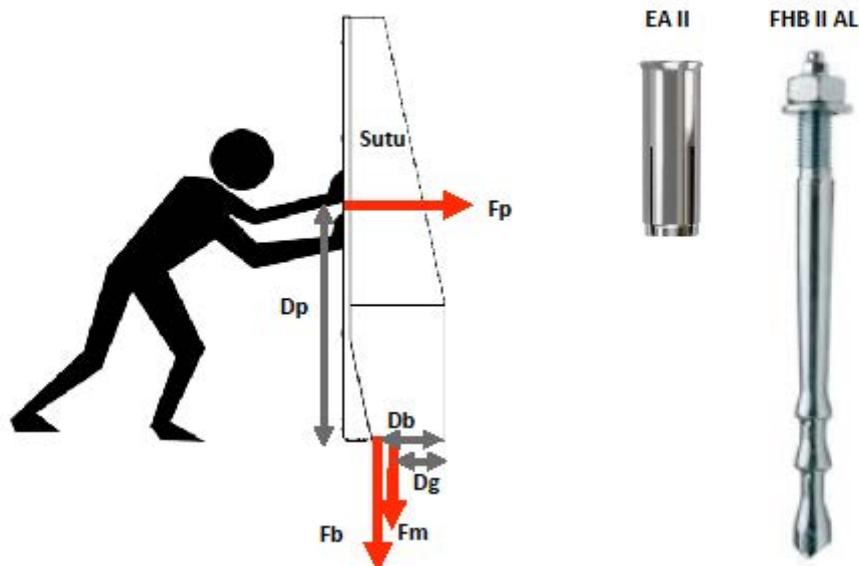
Surroundings

1. Standalone device: it is the best to place the Sutu Basic in front of a wall (without windows) When someone shoots over, the ball will bounce against this wall. Please keep a certain distance (>25cm) between the Sutu and wall. For maintenance of the electronics you'll need to be able to access the backside of the sutu.
2. In a boarding element or a cage. We recommend this option because it will extend the play value.

Please ask us for the available options for building the Sutu inside a boarding element.

Sutu basic against wall and built in a boarding

Electronics

To ensure electrical safety, the power cable is double insulated and the Sutu electronic parts operate at a safe low voltage (max 15V). All electronic parts are incorporated in the Sutu construction and stored waterproof (IP65).

The type of power cable to use: Ymvk ground cable, 2 cores, 2,5mm².

- The Sutu needs to be powered by 230V AC (110 V) AC
- The connection load of the Sutu is 230V (110 V) 5A
- The power cable (ground cable, possibly in protective tube) should be lead through the Sutu construction to the mounting panel with the electronic parts
- The power cable needs to be connected to the power socket on the mounting panel by a certified electronic engineer
- The power cable needs to be assembled in the blue power socket norm 2P + earth contact box of class IP44. This power supply MUST be assembled on separate group with a 30mA ground fault circuit interrupter (GFCI), fused on 10A or 16A. For example with a protection box of the type: Merlin Gerin

Internet

The Sutu contains a 3G modem for an internet connection with the Sutu server for remote maintenance and management. It needs to be checked if there is a signal (for instance with a mobile phone), especially when a Sutu is placed indoors. When there is no signal at all, an other internet solution need to be found (for instance UTP).

Power socket

Connection ground cable- power socket

Ground level

Power (ground) cable. 230V(110V) AC on separated group with ground fault circuit interrupter (GFCI)
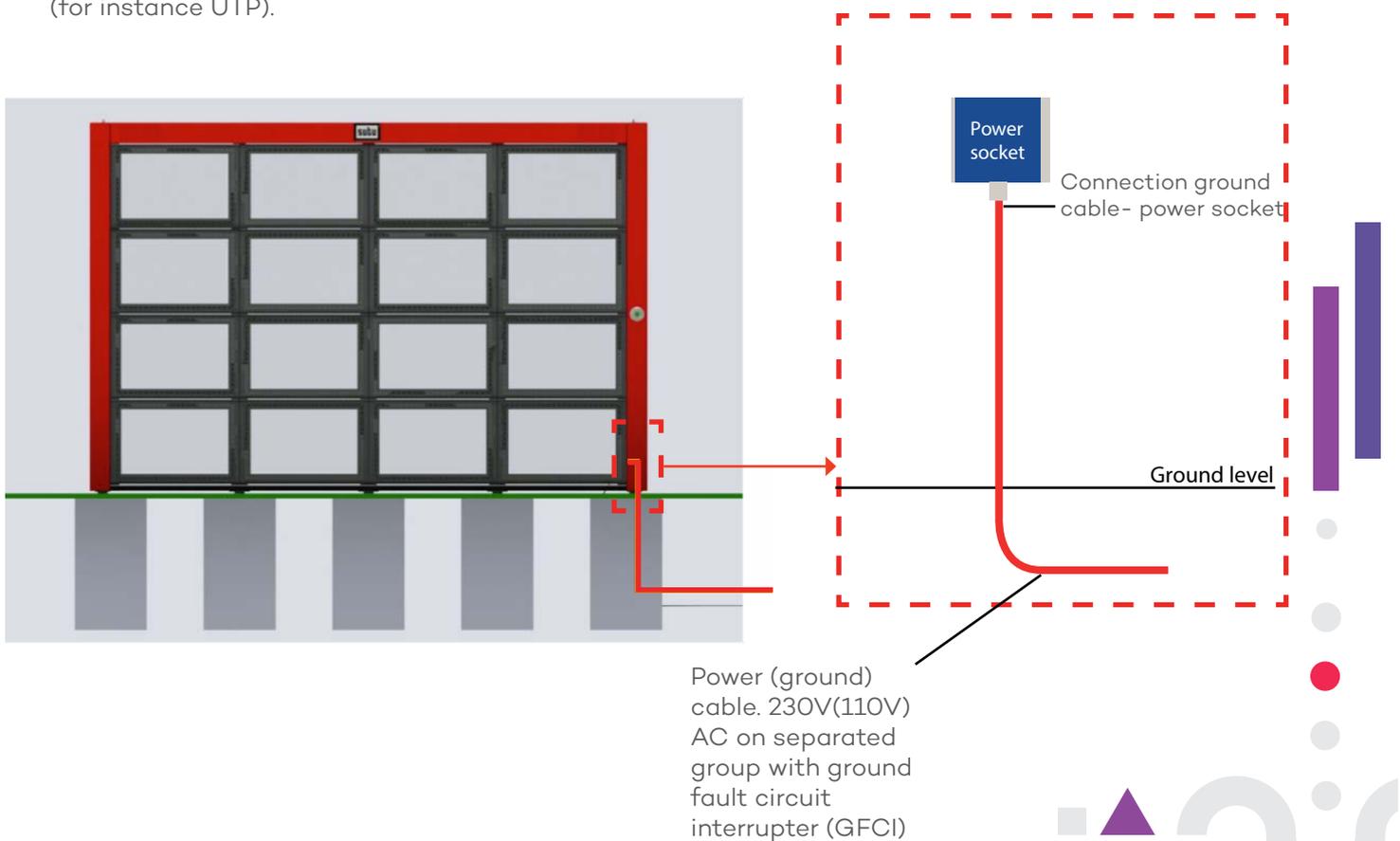
3. Online settings

You can manage your own device(s). Go to http://www.yalpinteractive.com/ and click 'login'. Log in with your user name and password, which is sent after signing the service agreement.

```
Login information
Web address:   my.yalp.nl
Login:              <user name>
Password:        ******
```

Different menu's are available on the website:

PRODUCTS
'Products' has 3 submenu's:
-'My products': shows your products to manage
-'Online products': shows your products which are online
-'Offline products': shows your products which are online

LOCATIONS
By clicking on 'my locations' you can select a product by location.

RANKING
In 'ranking' you will find the playtime of all products. You can see which product is most used.

HELP
In 'help' you can find the product manual per product.

INFO
In 'info' you can change your account settings, contact us or log off.

Homepage: click on 'products' and 'my products' to manage your products.

Select Sutu.

Statistics are shown per product.

Sutu Yalp

Yinid: 11001

Online Idle latest log: 2015-12-08 13:46:35

Stats   Log   Setup   Info

Statistics

start 08-12-2015   end 08-12-2015   Get

Total played hours: 00:02:48 hh:mm:ss

■ 00:01:58 Speed Sutu
■ 00:00:50 Shape
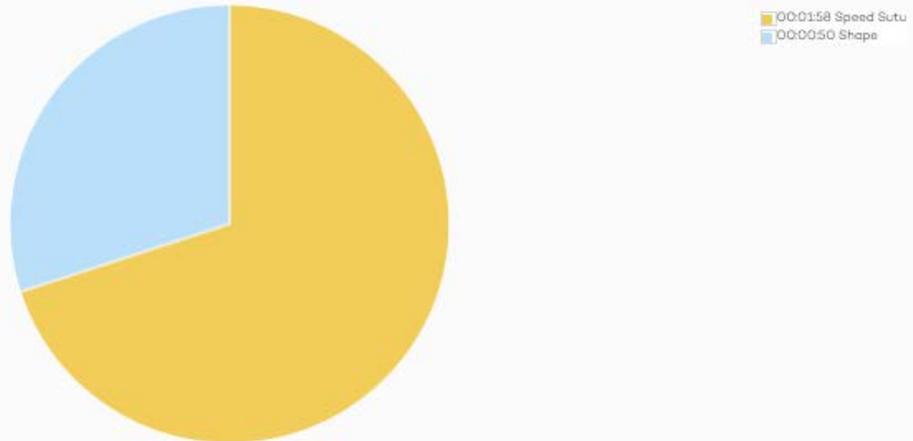
Hours played throughout the year
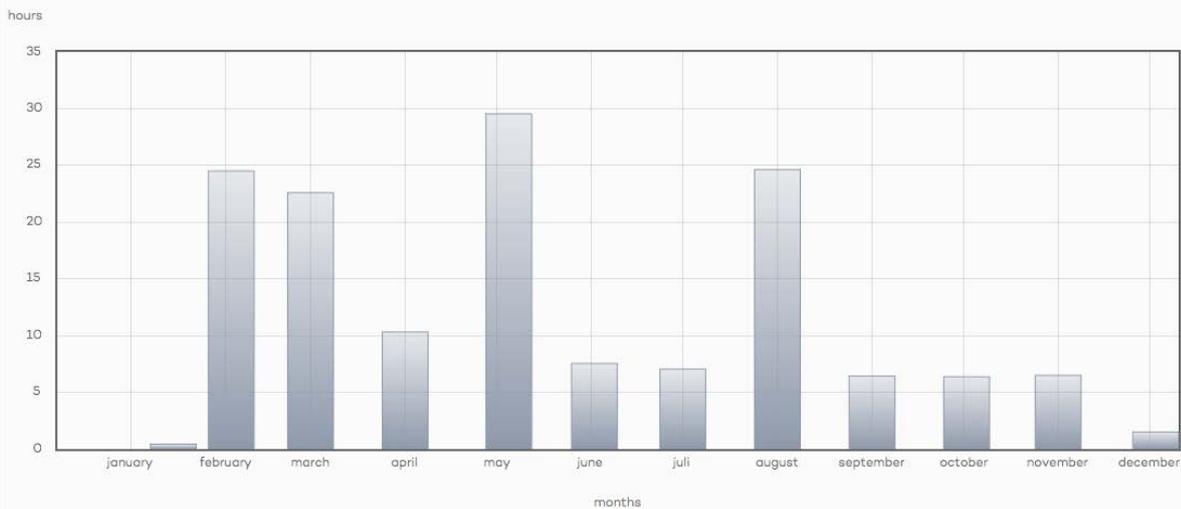
For each product you can look into the log. The log shows detailed background information that may help with problem solving.

Sutu Yalp

Yinid: 11001

Online Idle latest log: 2015-12-08 08:00:23

Stats   Log   Setup   Info

amount of rows: 10 20 50 100 200

Yinid	Message	Last Logtime	# Incidents

In setup you can set the on/off time, the volume, the languages and select games.

Sutu Yalp

Yinid: 11001

`Online` `Idle` `latest log: 2015-12-08 08:00:23`

Stats   Log   Setup   Info

Games

Select games (maximum of 5)

- ☐ Colour Sutu
- ☑ Fill the wall
- ☑ Fox Sutu
- ☑ HighScore Spot Sutu
- ☐ Target Sutu Multiplayer
- ☐ Penalty Game
- ☑ Shape
- ☑ Speed Sutu
- ☐ Target Sutu
- ☐ Time Sutu
- ☐ Training

save

Time

	on	off
Monday	08:00	21:00
Tuesday	08:00	21:00
Wednesday	08:00	21:00
Thursday	08:00	21:00
Friday	08:00	21:00
Saturday	08:00	21:00
Sunday	08:00	21:00

edit

Settings

Restart the product

restart

Selectable languages

If none selected, EN will be activated

- ☑ EN
- ☑ DE
- ☑ NL

save

Set the time to Idle in seconds

56

save

Set volume

5

save

In info you can find the product information.

Sutu Yalp

Yinid: 11001

`Online` `Idle` `latest log: 2015-12-08 08:00:23`

Stats   Log   Setup   Info

Product   Location   Weather

Product information

4. Games

General

The Sutu contains 10 games, which are shortly described below. The main characteristics of the games are: SIMPLE, OPEN & FUN. Children are challenged to use their fantasy while playing the games.

Games can be activated online on http://my.yalp.nl (chapter 3). A maximum of 5 games can be active at the same time, to make it simple for the users. If a new game becomes available it will be uploaded on your Sutu.

With a push on the button a choice can be made from the active games. Each game starts with a game name, followed by a short explanation. With a next push on the button within 10 seconds, the next game is activated. If you push the button after 10 seconds, the active game will restart.

After a minute of not playing, the Sutu will turn into 'idle-mode' (standby). When the Sutu feels impact on a panel, it may call something or start to make noise. With a push on the button the last chosen game will start first.

Below is an overview of the current game set.

Games overview

Color Sutu
Conquer the wall in the color of your choice. Try to shoot as many of your opponent's panels in your color (red or green) within two minutes. Even better, and the ultimate victory: If you manage to shoot all the wall panels in your color, you automatically win!

Time Sutu
The digital variant of the well known wall football game. The Sutu lights up and more and more panels switch off from top to bottom. By hitting the wall on time, the whole wall lights up again. Hit the wall as many times as possible.

Shape Sutu
Shoot out the panels as they light up. Try to hit the right panels and shoot out the shape. The shapes become gradually more difficult. Challenge yourself by shooting from further and further away. Who has the best shot?
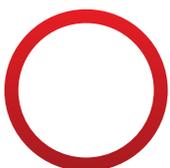
Total Sutu
Try to fill the entire wall by hitting each panel. It sounds easy, but: If you hit a panel you'd already hit, you start all over again! The challenge is to fill the entire wall. Variant: Play against each other, taking turns: The first one to miss has lost.

Double Sutu
Try to copy each others' shots by hitting exactly the same panel as your fellow player. Player 1 shoots a panel of his choice, player 2 tries to hit the same panel. Variant: A player behind the Sutu taps the panel to be hit, by hand. The other player tries to hit that panel; the ultimate training for your shooting techniques.

Target Sutu
A target will appear on the wall. Try to hit the target to get to the next level.

Target Sutu multiplayer
The multiplayer version of target Sutu. Choose your color at the beginning of the game. A target of your chosen color will appear on the wall. Try to hit the target to stay in the game.

Speed Sutu
Shoot as hard as possible. On the Sutu wall your speed will be shown in km/h.

Spot Sutu, highscore game
Hit the lit target before it empties and set a score. The further you get the faster the target empties and the more targets appear. Look out for the double colored panels, these bonus panels will help you to set a higher score!

You have 3 lives and at the end of the game your high score is shown on the Sutu wall. The score can be claimed at mysutu.com.

Penalty Sutu
Take penalties. Switch between keeper and shooter and win this knock-out game!

5. Sound

The Sutu has built in four speakers with an amplifier to give game explanation and use special effects to make the games more fun! The sound level and on/off times of the Sutu can be controlled online on http://my.yalp.nl (chapter 3). To prevent sound annoyance we advice to regulate the sound volume to a level so that the sound is not audible at the nearest residence.
As a rule of thumb, we advise not to place the Sutu within 50 meters of the nearest residence.

Please note that often background noise at a location (for example a schoolyard, or a location near a street) is above 55dB, and is more noisy then the Sutu at a distance.

The Sutu itself is designed to minimize the sound of the impact of the ball by using:

• A good suspension of the panels by using EPDM rubber
• Sound damping plates in hollow spaces
• Ribs in hollow spaces for sound absorbtion
• The thickness of the PC panels will absorb most sound.

The results of the sound test of a soccer ball done by Kraaij Akoestisch Adviesbureau.

Sutu	70 dB(A) contour (norm dayperiod)	65 dB(A) contour (norm evening period)	60 dB(A) contour (norm night period)
Front	14 meters (46 ft)	25 meters (82 ft)	42 meters (138 ft)
Back	8 meters (26 ft)	14 meters (46 ft)	25 meters (82 ft)
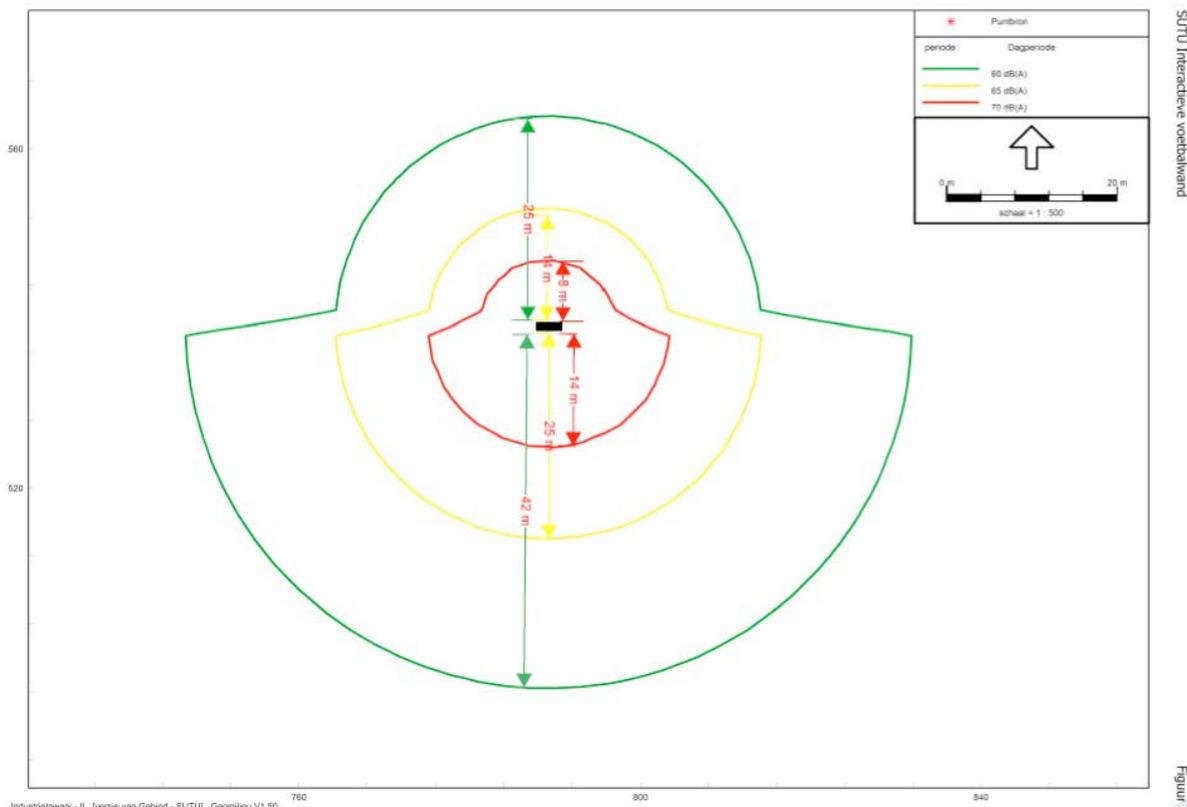
6. Language

Multiple language versions

If your Sutu has multiple language versions available then the preferred default language can be selected in the settings menu on http://my.yalp.nl (chapter 3).
You can make more then one language active at the same time, by selecting multiple boxes at 'settings'.
If you select no languages, the Sutu will use the default language.

Switch language with button

If your Sutu is equipped with multiple language versions, and more then one language is active, these can also be switched using the button on the Sutu. Press the button longer then 3 seconds and the Sutu will switch to another language.
If no languages are selected, the Sutu will switch to idle ('standby') mode when it is pressed longer then 5 seconds.

Screenshot from http://my.yalp.nl
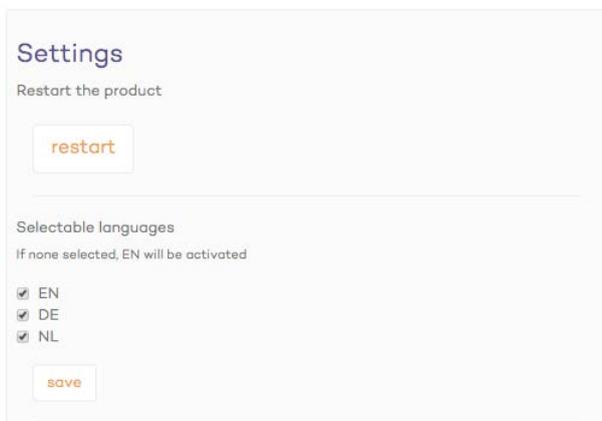
7. Manual settings

It is also possible to set time, volume and games manually on location. We recommend changing settings on http://my.yalp.nl (chapter 3), but in some situations (e.g. no internet connection) the manual settings mode is the way to work. Start with step 1 and follow instructions.
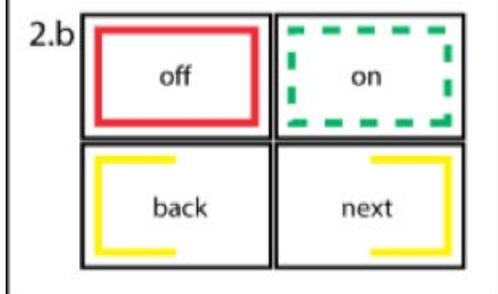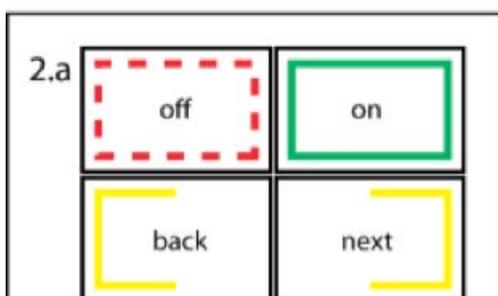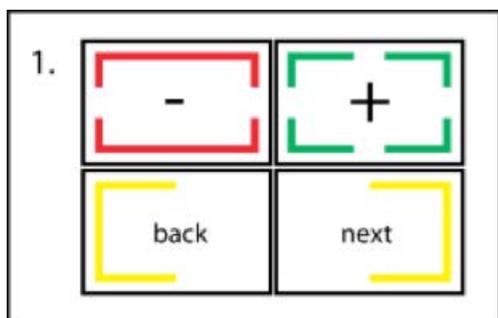
1. Access Manual Settings menu
1. Disconnect power by pulling the plug
2. Connect the power
3. Push the Sutu button until you hear 'Sutu Settings'
4. Release the button, four panels will lighten up.

2. Volume settings (figure 1)
1. You hear 'Volume settings', repeatedly followed by the current volume
2. Tick the green/+ panel for increasing the volume
3. Tick the red/- panel for decreasing the volume
4. Tick the next panel for the next menu item

3. Start time ("awake time") (per quarter)
1. You hear 'awake time settings', repeatedly followed by the current awake time.
2. Tick the green/+ panel for increasing the time
3. Tick the red/- panel for decreasing the time
4. Tick the next panel for the next menu item

4. Stop time ("sleep time") (per quarter)
1. You hear 'sleep time settings', repeatedly followed by the current awake time.
2. Tick the green/+ panel for increasing the time
3. Tick the red/- panel for decreasing the time
4. Tick the next panel for the next menu item

5. Games on/off (figure 2.a/2.b)
1. You hear a game explanation (e.g. 'Time Sutu, ...!') followed by 'is on' or 'is off'
2. Tick the green panel for putting a game on
3. Tick the red panel for putting a game off
4. Tick the next panel for the next menu item
5. After last game: back to volume settings (2.) again

6. Exit manual settings menu
1. All settings done?
2. Push the button
3. Start playing!

Status information

The Sutu has six different modes (as you can see in the table below).

STATUS	DESCRIPTION	Indication leds****	Panel LEDS	Sound***	Vibration	Button	Remote indication
ON	Games can be played. This state can be changed in the time table.	ON	Game dependent.	ON	ON	ON , games changes	"GAME NAME"
IDLE	After 60 seconds (standard) of non-playing, the Sutu goes to the Idle state. Push on the button to go back to the ON state *	ON	Red line of 3 leds, moving on the panels*****	ON , When the button is pressed	ON, yellow panel flashes.	ON , Games starts are push.	"IDLE"
SLEEP	No games can be played. This state can be changed in the time table.	OFF	OFF	OFF	OFF	OFF	"SLEEPING"
YIN CRASH	When the computer crashes, the game REDGREEN will start.	ON	ON , red and green panels	OFF	ON, changing between red and green.	OFF	"OFFLINE"
OFF	De power of the Sutu is OFF, no games can be played. The remote access doesn't work.	OFF	OFF	OFF	OFF	OFF	"OFFLINE"
DEEP SLEEP**	The Sutu is in DEEP SLEEP en uses less then 1 W.	OFF	OFF	OFF	OFF	OFF	UNKNOWN

Table with status information

* Push the button for 10 seconds in ON modus, the Sutu goes to IDLE modus.
** Available end 2010
*** When there is no sound, please check the volume slider on http://my.yalp.nl.
**** Next to the 72 panel leds, you can find one indication led.
***** Three green leds means that the product is online, red lines means offline.

8. Warranty

Warranty
We give warranty on the Sutu. The warranty terms are determined for the different parts:
- 3 years expiring warranty on all electronics and interactive panels (first year 100% warranty, second year 2/3rd warranty of part price, 3rd year 1/3rd warranty of part price)
- 10 year warranty on the steel construction

Ask for our warranty terms for more detailed warranty information.

Certificates
The Sutu meets the standards set for games and sports equipment in public spaces. The Sutu has been tested and approved according to the European requirements of the NEN-EN 1176 norm (playing equipment) and NEN-EN 15312 norm (sports fencing).

This means that it has been proven safe in terms of falls, trapping of fingers and climbing possibilities (NEN-EN 1176). Moreover, the Sutu with fence is very sturdy, can withstand severe blows and complies with the measurements required by various sports (NEN-EN 15312).

Tests
The Sutu has successfully passed many tests. These included its resistance to hefty blows, temperature variations and vibrations. A summary of the tests.

Drop test according to NEN-EN 15312:2007 (Carried out by: TNO)
During this test, a 50kg ball was dropped 1000 times from 35cm height onto a working Sutu panel. As a comparison: This is comparable with a shot of approximately 140km/hr with a normal football. The weight was also dropped once from a height of 50cm, for an impact test. During this test, the electronics and the construction must not become defective or damaged, or be deformed more than 1.5%.

That was not the case indeed: The Sutu panel passed this test.

Temperature test (Carried out by: MASER)
During this test, a connected interactive Sutu panel was exposed to temperature variations. The extremities range was from -35° C to + 85° C. This test shows whether the electronics continue to work at the various temperatures, and whether the various materials react well to expansion/shrinkage.

The Sutu panel passed this test.

HALT Test (Carried out by: Maser/Thales)
During the so-called HALT (Highly Accelerated Life Test) test, the use process was accelerated by having the product vibrate strongly with random vibrations while also increasing (+50 ° C) and decreasing (-20ºC) the temperature of the product. It was a very severe test therefore.

The electronics of the Sutu panel worked continuously during the test, there was no damage. This test too was successfully completed.

9. Technical information

General information

Loading space	3,85 x 0,8 = 3,08 / 2,4 = 1,28 = rounded 1,3 loading space
Weight Sutu Dimensions	± 400 Kg (± 882 lbs) 3,25 x 0,5 x 2,2 m (L x W x H) (10,7x 3,1 x 12,5 ft)
Transport Weight Sutu in transport box Dimensions transport box	± 710 kg (±1565lbs) (transport box = 280kg (± 617 lbs) 3,45 x 0,8 x 2,38 m (L x W x H) (11,3 x 2,6 x 7,8 ft)
Electronics: Input Output	230 V~(110 V possible) 12 V DC/ 15 V DC
Internet connection	3G modem with data SIM card
Energy use In use In idle mode (standby) Sleep	52-167 W (game dependent) Average 90 W 36 W 12 W
Tested temperature of electronics* (*please keep power on at all times for the integrated active climate control to work)	-35 to +70 °C (-31 to +158 °F). NB. Some electronics may switch off earlier within this range automatically to prevent damage. Ask us for extra temperature precautions outside this temperature range.

Dimensions
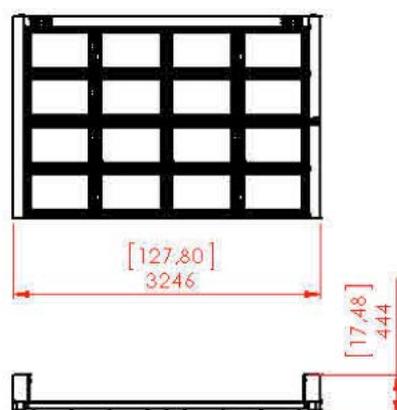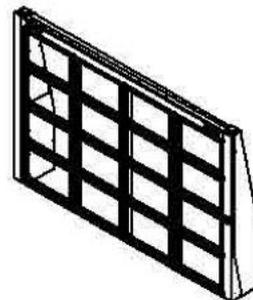
10.   Versions

Version/Date:	Adjustments
v1.2/16-12-2015	–Added my.yalp.nl