

Hands on with RFID

Aron Ambrosiani

Museums and the Web 2019



The Journey of Light

@AronAmbrosiani

Aron Ambrosiani, technical producer

@zihrl

Robert Ziherl, main producer



Nordic Light



nordens
ljus

nord
light

NORDENSKJÖLD

ordens ljus

s för något alla mänskliga kreaturerna har gjort vilket är att
påverka vi ljus.

det verkar här vi har latt i Nordens ljus
grönhet med dagligt och naturligt
det här mänskliga ljuset.

er driften har för veden var författnings
spänning till veden var författnings
lyste. Oavsett var det nattetid
er ljuset sätter var det spänning.

det, från morgon till där vi själv
spänning till veden var författnings
tycket och har överlämnat till
högtidsmedvetenhet. Detta är ljus.

ljus, ljus, ljus.

nordic light

Light is something people have
in common, yet each culture
has their own way of doing it.

During winter the Nordic regions
have daylight, while in summer
we have night time.

Light from the sun is what we
need to live and work in cold
weather conditions. The best natural
light is the Northern Light - our
light, our Northern Light.

Light, whether human culture or
natural, affects how we live and work.
This exhibition shows how the
Northern Light has influenced
the culture and the people in the
Nordic countries.

Light, whether human culture or
natural, affects how we live and work.
This exhibition shows how the
Northern Light has influenced
the culture and the people in the
Nordic countries.

0
1
2
3
4
5
6
7
8
9

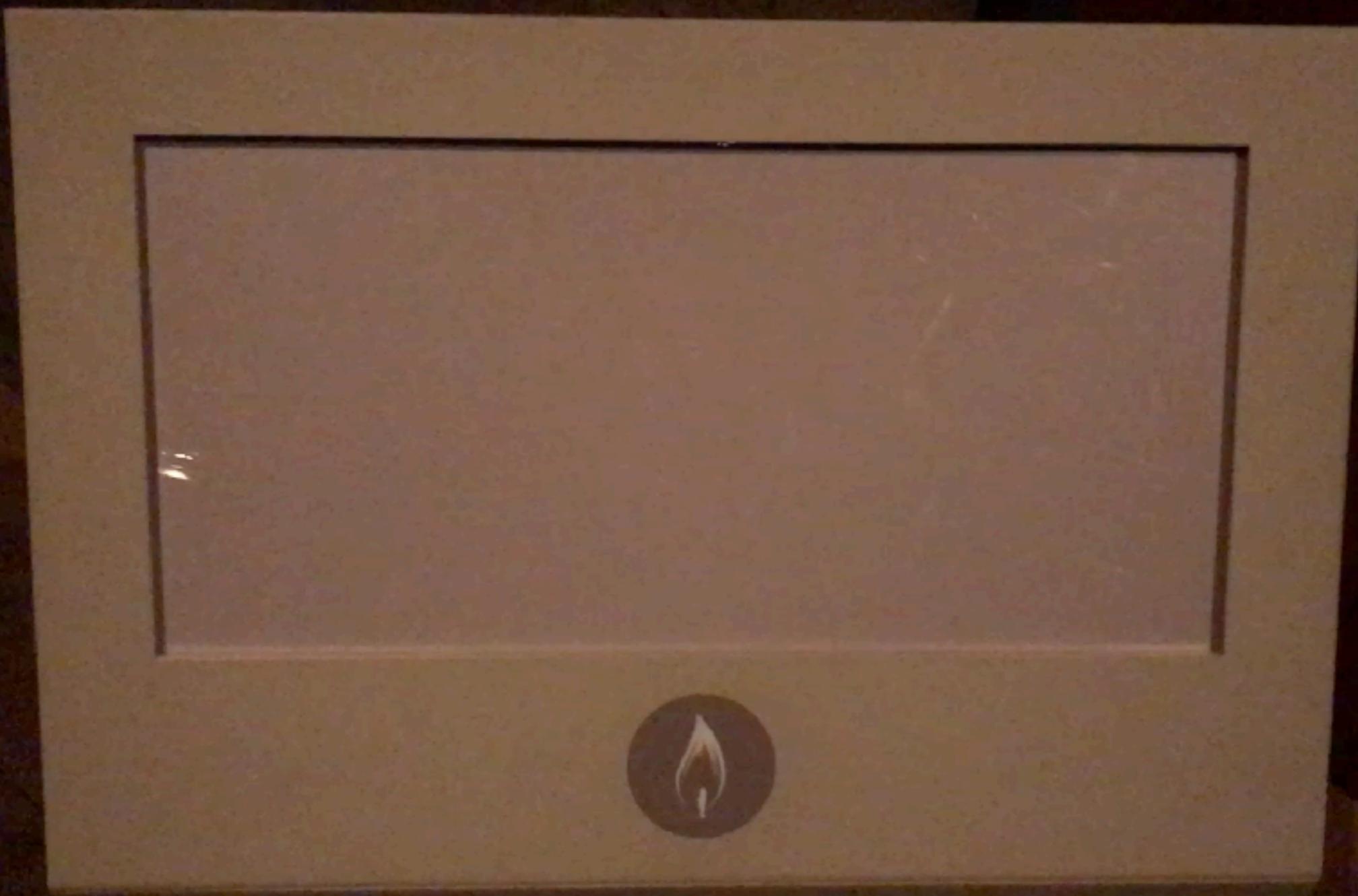




The Journey of Light



demo





Ljusresan • The Journey of Light

I ljuset från festen

I stugan tänds inte dyra ljus i onödan.
Men på slottet kan både väggar och
människor glittra långt efter det att
solens har gått ner.

Titta på tavlan. Det klirrar i kronans
kristaller. Ljuset studsar i silvertrådar
och sidentyg. Var kan ditt ljus spegla
sig för att rummet ska lysa starkare?



In the light from the party

Poorer people do not light expensive
candles unless they have to. But at
the palace, both the walls and the
people can glitter long after the sun
has gone down.

Look at the picture. The crystal
chandelier is tinkling. The light is
bouncing off silver threads and silk.
How can you use your light to make
the room shine more brightly?





Vem tändar 900 ljus i mörkret?
Who's lighting 900 lamps in the dark?

Ljusresan • The Journey of Light

I lykttändarens spår

För länge, länge sedan var det så mörkt på gatorna att man helst inte gick ut efter solnedgången. Men så installerades gaslyktor. Dagen förlängdes med nya timmar. Det var inte längre bara katter som kunde se i mörkret.

I skymningen måste alla lyktor tändas, 900 stycken, innan det blir mörkt.
Har lykttändaren glömt några?



In the lamplighter's footsteps

A very long time ago, the streets were so dark that people preferred not to go out after sunset. But then gas lamps were installed. The day gained new hours. It was no longer just cats that could see in the dark.

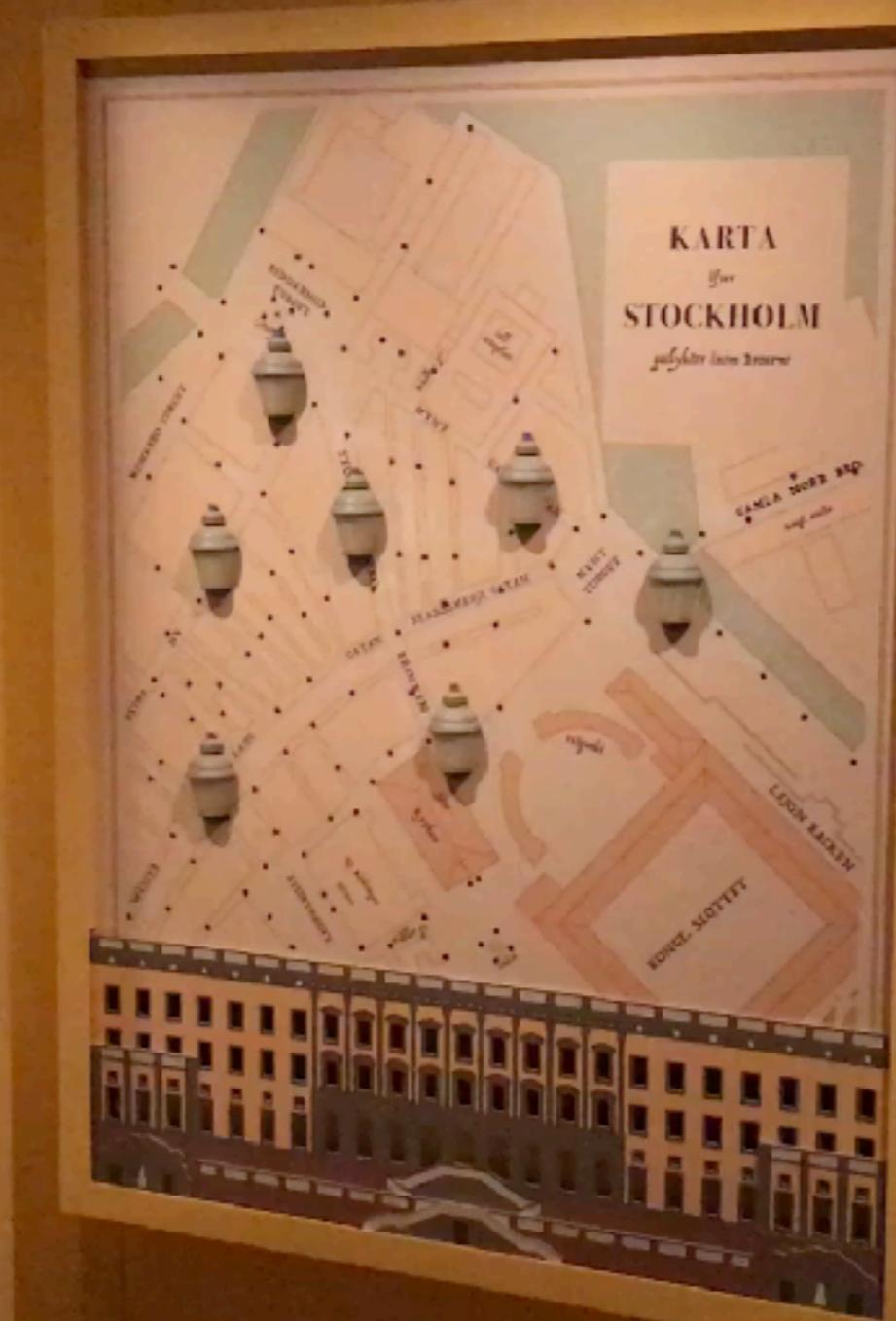
At dusk, all the lights have to be lit, all 900 of them, before it gets dark.
Has the lamplighter missed any?

bättre belys

Före 1780 hände inte mycket på belysningsområdet. Mörkret var lika naturligt som dagsljuset. Tända ljus och oljelampor gav svagt ljus trots förbättrad teknik vid 1700-talets slut.

Under 1860-talet slog fotogenlampen igenom. Den gav ett betydligt bättre ljus och lyste snart i alla hem. Med fotogenlampen gick det att få relativt starkt ljus var som helst i rummet och ljuset gick lätt att flytta med sig.

Belysning med gas var moderner men dyr i hemmiljö. Gasljus blev viktigtast som gatubelysning.











basic interaction in each room

1. Instructions & context
2. Task (find/activate something)
3. Light Effect (experience + confirmation)
4. Checkbox in last room (confirmation)



involve family/group in
the experience



active learning

iterative design process











gaslampa —

Tvådelad taklampa
takbelysning för
talets senare del

(När du är klar gör du till nästa rum.)

I skuggan
Hösten i dunkel.
Det är lise nätet gär best i
ett hus där solen är uppe.
Ellektörnens skiner.
Men du kan använda ditt ljus.

Sed nu som lurar i skuggorna?
Det finns i borg kyrklockor, stål
och vatten som skrämmar i väg
vad som är väsen. Lycka till!

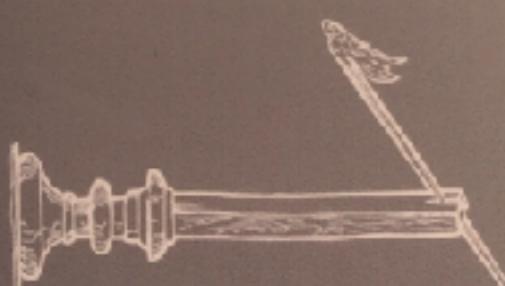
What's skulking in the shadows?
It's not just church bells, steel and
silver that scare away the gnomes
and trolls. Good luck!

(When you've finished, go on to
the next room.)

Ljusresan • The Journey of Light K45

In the shadows

Here, we live in darkness. If you
want to see, wait until the sun rises.
Or until the moon comes out.
But you can use your light.



PANTONE 420 M % pt PANTONE Black 1.1
::: 64 pts PANTONE Ref. Blue 4
PANTONE Trans.Wt. 98.5

PANTONE 421 M % pt PANTONE Black 2.3
::: 32 pts PANTONE Ref. Blue 7
PANTONE Trans.Wt. 97.0



Release • The Journey of Life

14

69

60

47

9

7



new life test

the day is over
the night is over
the day is over
the night is over
the day is over
the night is over

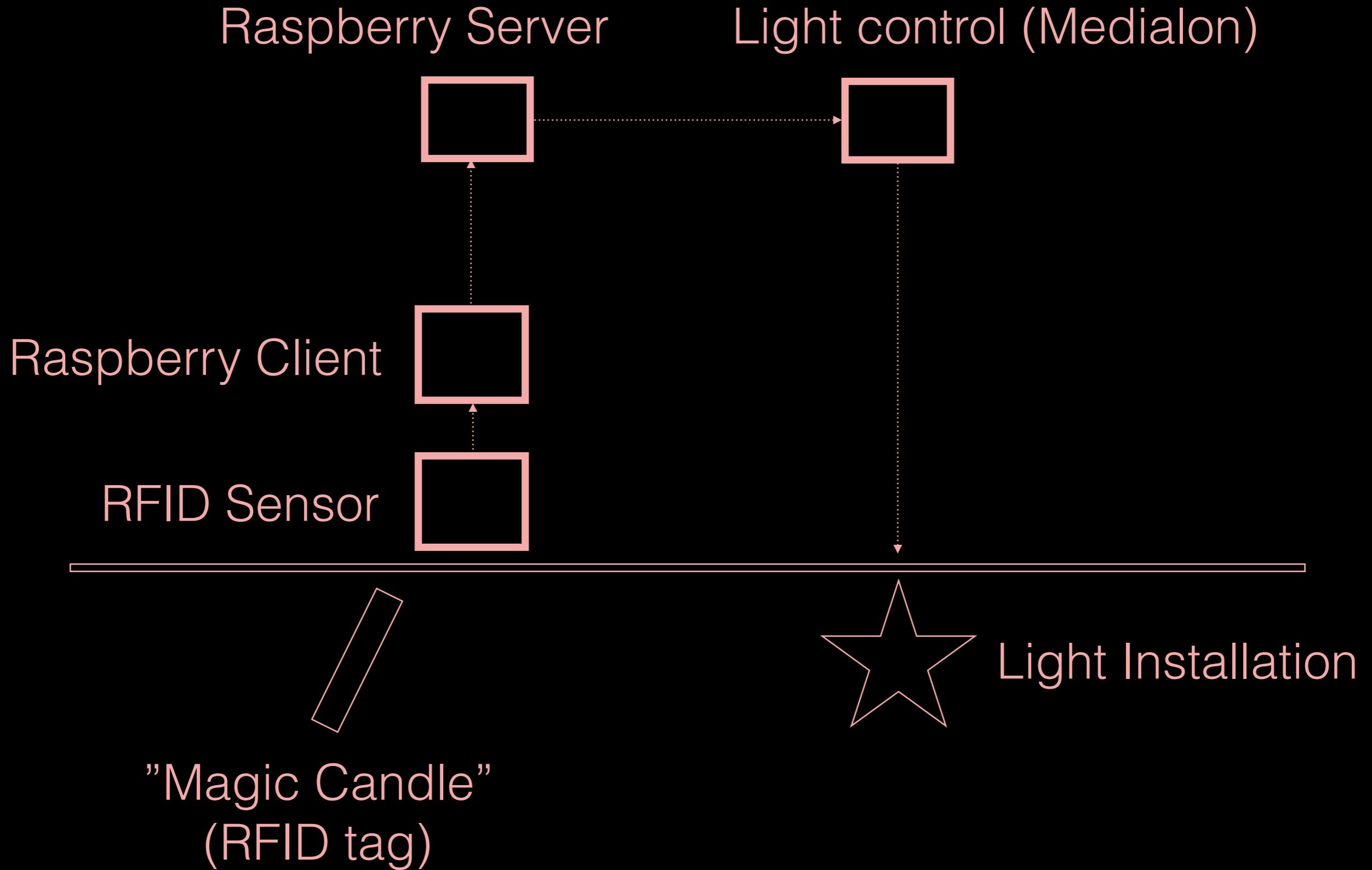
Time is over. Day is over; it's now
time to sleep. Time is over; it's now
time to sleep. Time is over; it's now
time to sleep. Time is over; it's now
time to sleep.

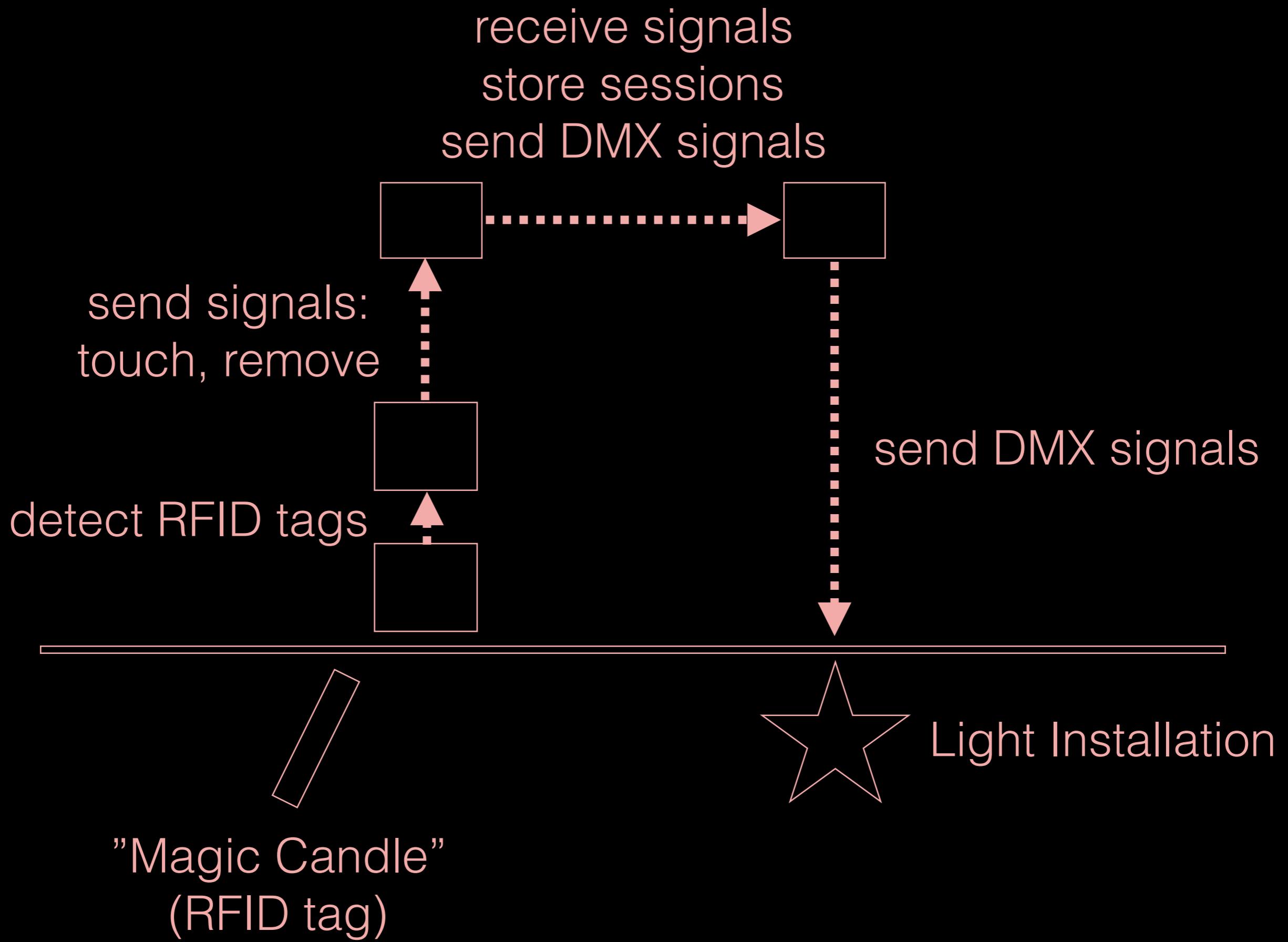




In-house team + consultants

- Overall experience, project management:
Nordiska museet (Robert Ziherl, Aron Ambrosiani)
- RFID Sensors: Interaktiva rum + Aron
- Session Server: Earthpeople + Aron
- Light Design: Kreativ teknik
- Copywriter: Tuvalisa Rangström + Robert





RFID Sensor (Python)

- Code based on Adafruit's demo python script
- Loop listening for detected RFID tags
- If a new tag is detected, send "touch"
- If the tag is no longer detected, send "remove"
- include RFID tagUid (unique identifier)
- include unique identifiers (room, station)

```
31 while True:
32
33     # Read card, if available
34     uid = pn532.read_passive_target()
35
36     #If tag uid has changed from previous iteration
37     if uid_last != uid:
38
39         # If old tag has been removed
40         if uid_last != None:
41             print('Removed card with UID: 0x{0}'.format(binascii.hexlify(uid_last)))
42             # Send HTTP request to server
43             sendRequest(ip,host,endpoint,static_user_data,uid_last,"remove")
44
45     # If new tag is detected
46     if uid != None:
47         print('Found card with UID: 0x{0}'.format(binascii.hexlify(uid)))
48         # Send HTTP request to server
49         sendRequest(ip,host,endpoint,static_user_data,uid,"touch")
50
51     #Update uid_last
52     uid_last = uid
53
54     time.sleep(read_sleep)
```

Session Server: API (Node)

- Store sessions
- Receive HTTP requests from clients (previous slide)
- send DMX signals
- connect browser to specific sessions

```
16  stationMapping: {
17    1: [
18      {id: 2, T: '01', P: '05', D: '01', timeout: -1}
19    ],
20
21    2: [
22      {id: 3, T: '02', P: '09', D: '01', timeout: -1},
23      {id: 4, T: '02', P: '11', D: '01'},
24      {id: 5, T: '02', P: '12', D: '01'}
25    ],
26
27    3: [
28      {id: 6, T: '03', P: '10', D: '01', timeout: -1},
29      {id: 7, T: '03', P: '08', D: '01'},
30      {id: 9, T: '03', P: '08', D: '03'},
31      {id: 10, T: '03', P: '08', D: '02'},
32      {id: 11, T: '03', P: '08', D: '04'}
33    ],
34
35    4: [
36      {id: 12, T: '04', P: '09', D: '01', timeout: -1},
37      {id: 13, T: '04', P: '08', D: '01'},
38      {id: 14, T: '04', P: '08', D: '02'},
39      {id: 15, T: '04', P: '08', D: '03'},
40      {id: 16, T: '04', P: '08', D: '04'},
41      {id: 17, T: '04', P: '08', D: '05'},
42      {id: 18, T: '04', P: '08', D: '06'},
43      {id: 19, T: '04', P: '08', D: '07'},
44      {id: 31, T: '04', P: '08', D: '08', onWhen: [12, 13, 14, 15, 16, 17, 18, 19]}
45    ],
46
47    5: [
48      {id: 20, T: '05', P: '08', D: '01', timeout: -1},
49      {id: 21, T: '05', P: '05', D: '01'},
50      {id: 22, T: '05', P: '05', D: '02', dependsOn: [21]},
51      {id: 23, T: '05', P: '05', D: '03', dependsOn: [21]},
52      {id: 24, T: '05', P: '05', D: '04', dependsOn: [21]},
53      {id: 25, T: '05', P: '05', D: '05', dependsOn: [21]}
54    ],
55  ],
56  onWhen: [1, 2, 3, 4, 5]
57}
```

Session Server: Browser (React)

- receive session from API
- App: display results of active session
- Observer: display results of active session
+ admin console

```
11 const validateCompletion = (roomId, numStations) => {
12   switch (parseInt(roomId, 10)) {
13     case 1:
14       return !!numStations
15     case 2:
16       return !!!(numStations === 3)
17     case 3:
18       return !!!(numStations > 3)
19     case 4:
20       return !!!(numStations > 8)
21     case 5:
22       return !!!(numStations === 6)
23     case 6:
24       return !!!(numStations)
25   }
26 }
```



Välkommen
Welcome

Nordiskt ljus
Nordic Light

Ljusresan för barn
The Journey of Light



NORDISKA MUSEET

Nordiskt ljus

NORDIC LI

