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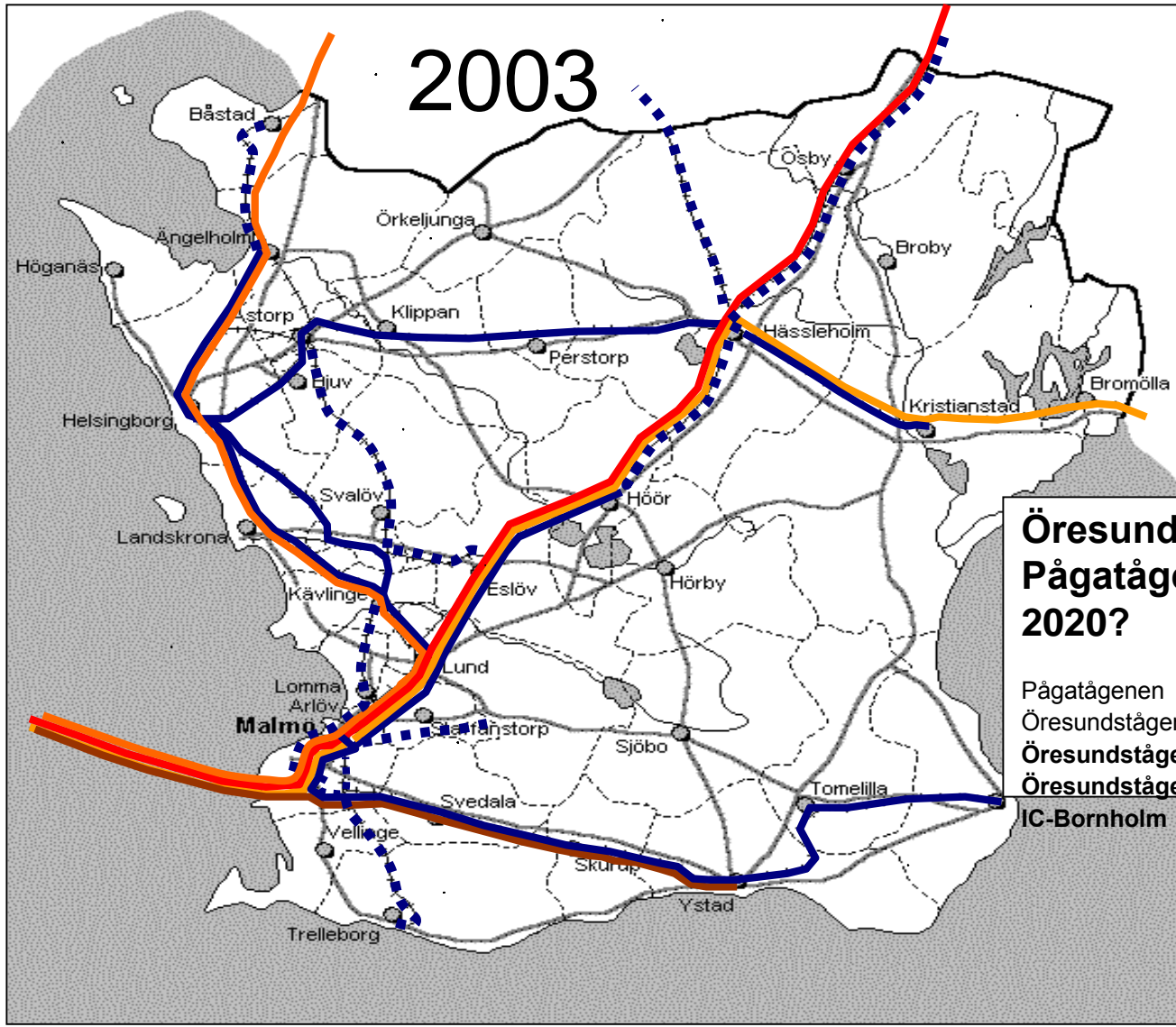
**6 years in ~~30~~ minutes -
Creating a modern regional train**



24th of November 2009

Claes Ulveryd

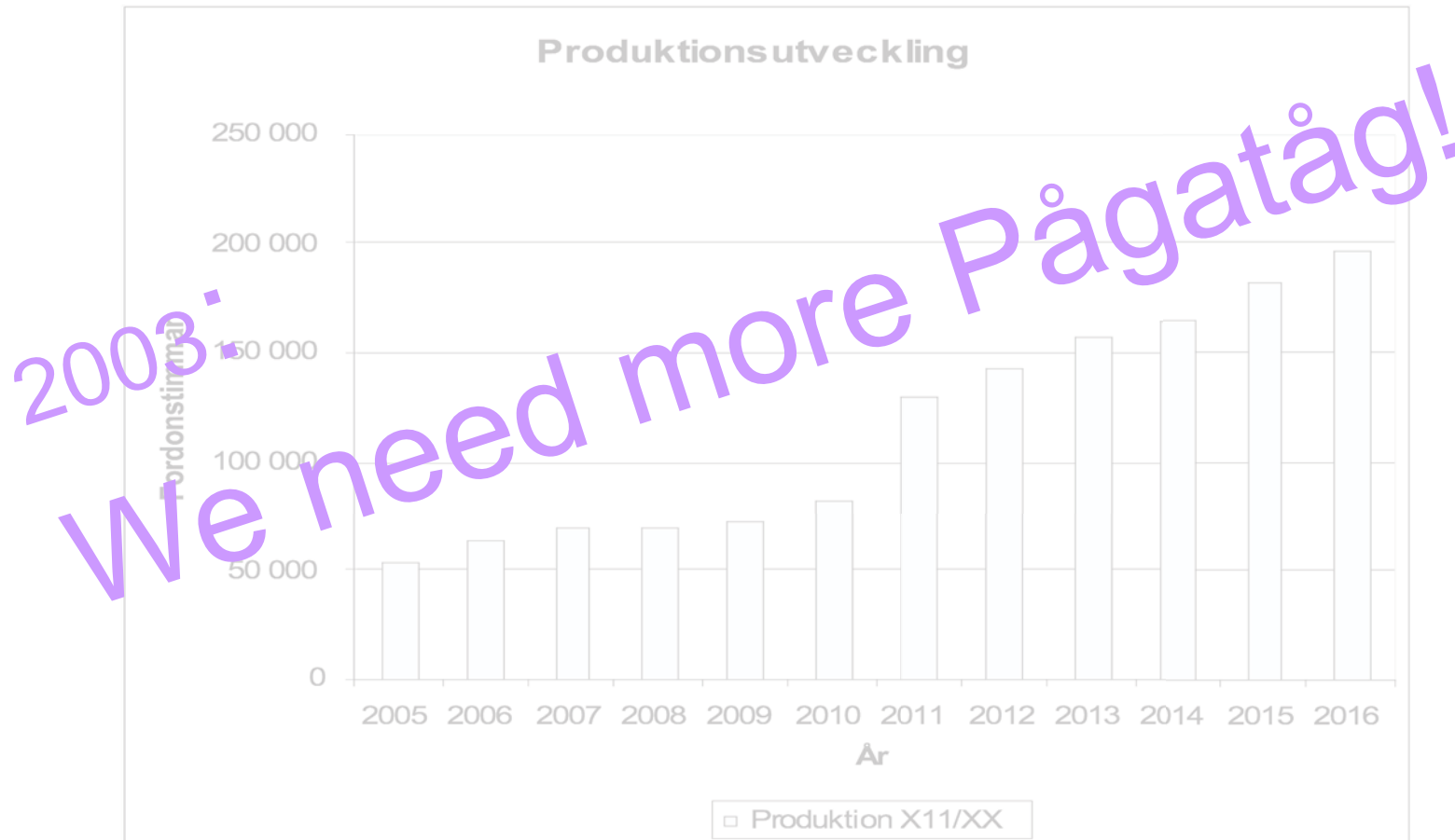
Skånetrafiken



Öresundståg and Pågatågen in Skåne 2020?

- Pågatågen
- Öresundstågen
- Öresundstågen
- Öresundstågen
- IC-Bornholm

Next generation of Pågatågen



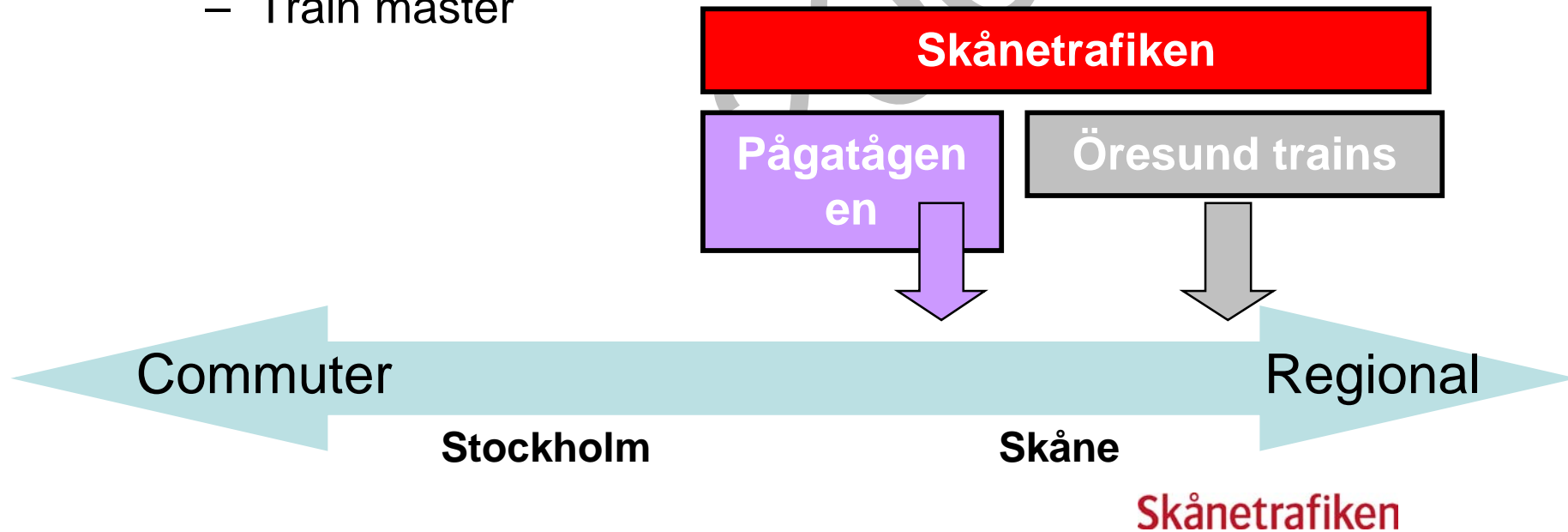
Next generation of Pågatågen

- A train adopted for Skånetrafiken
- No "prototype"
- Comfortable and flexible interior
- For all = no/few obstacles
- Good performance => short travelling times, better availability
- Low operating costs
- Balanced position vs the Öresund train
- Strengthen and develop the Pågatågen profile

Next generation of Pågatågen

"Inherited" features

- Travelling times: up to 100 minutes, medium 25
- Toilet
- Flex area
- Train master



Next generation of Pågatågen

- 40-70 units in 2020
- More regional than local
- Approx 250 sittplatser
- 160-180 km/h
- (Partly) Low floor
- Flex area
- Toilet
- Train master compartment

Next generation of Pågatågen

Evaluation on

- Performance
- Safety and Security
- Comfort
- Availability for disabled
- Others

Next generation of Pågatågen

Contract 2006

- 26th of December
- 49 EMUs
- 250 m€
- Manufactured in Salzgitter, Germany

Next generation of Pågatågen

74,3 m	(current: 50,0)
4 coaches	(2)
3 258 mm	(3 080)
240 seats	(178)
160 km/h	(140)
0,88 m/s ²	("0,8")

Next generation of Pågatågen

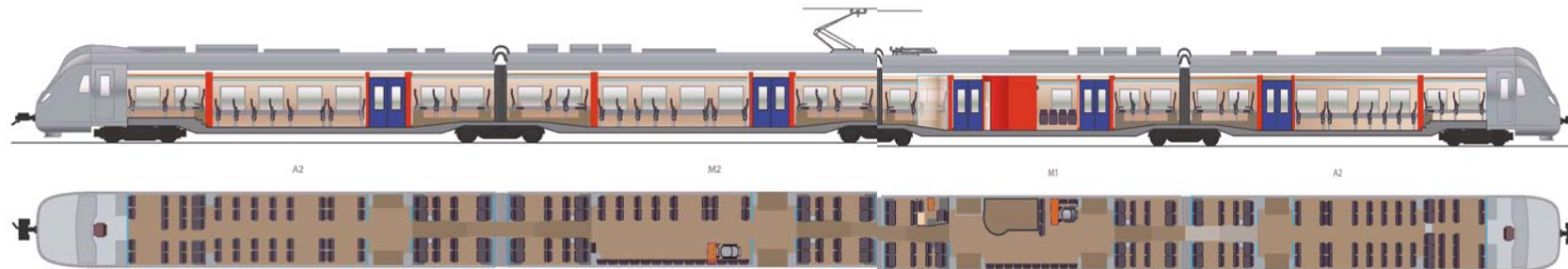
All 5 entrances in height with platforms

See-through

Layout

FLEXIBEL INTERIÖR. Tågkonceptet möjliggör direktinsteg från plattformen genom alla dörrar. Tågets breda profil ger ett stort sittutrymme på bredden och en rymlig mittgång. Sittplatser finns för cirka 240 resenärer (beroende på tågets konfiguration) och två tågmästare. Halften av resenärerna sitter i tågets färdriktning. En alternativ möblering med ett extra flexutrymme ger totalt två platser färre

men ökar flexibiliteten och möjliggör fler handikapplatser. I flexutrymmet till vänster får yttre resenärer två rullstolar plats i tågets färdriktning genom att fälla ned ett bord som annars är uppfällt mot väggen mellan två fönster. I flexutrymmet till höger ryms fem stolar vid toaletten. Två av sittplatserna kan utrymmas för att inbysa en rullstol. Genom en nedfällbar arm kopplas rullstolen fast.



Next generation of Pågatågen

Working process 2007

Focus:



The customer!

Skånetrafiken



Next generation of Pågatågen

Working process 2007

Base and guiding principle:

- General description of design level (prio 1!)
- Technical description (prio 2)
- Design book (prio 3)



Next generation of Pågatågen

Working process 2007

•General description of design level

The train should strengthen and develop the Påga Train profile. It will be modern today and for many years to come. Thus it will set a **new standard** and serve as a model for regional trains in Sweden. It will incorporate **proven** materials and functions, yet representing front-edge technology. The trains will be benign to the **environment**. The train's competitor is the motor car; therefore it should also offer an attractive alternative for **car owners**.

It will be convenient, **comfortable**, flexible, pretty, and safe. It should be airy and provide a good overview. It will be functional and safe **for all users**; passengers with different types of handicap will be given special consideration. It should radiate care, quality and competence.

It should be a product in the vein of the Swedish/**Scandinavian** design tradition, with Scanian overtones. And with harmonizing colours, promoting and developing the Påga Train profile.

The **seats** will be comfortable and they should look cosy, too. There will be tables at most of the seats. Plenty of luggage racks, handrails and waste-baskets. The lighting will be functional, contributing to giving the passenger a comfortable and safe journey. The information displays will be clearly visible from all seats.

All materials will be of good **quality** and provide high functionality. **High-finish** surfaces which are durable and hardwearing. Great care should be given to **details** as well: buttons, controls, connections, etc. Joints and transitions between different surfaces should be smooth, and mounted invisible.

Skånetrafiken

Next generation of Pågatågen

Working process 2007

- Technical description



Next generation of Pågatågen

Working process 2007

- Design book



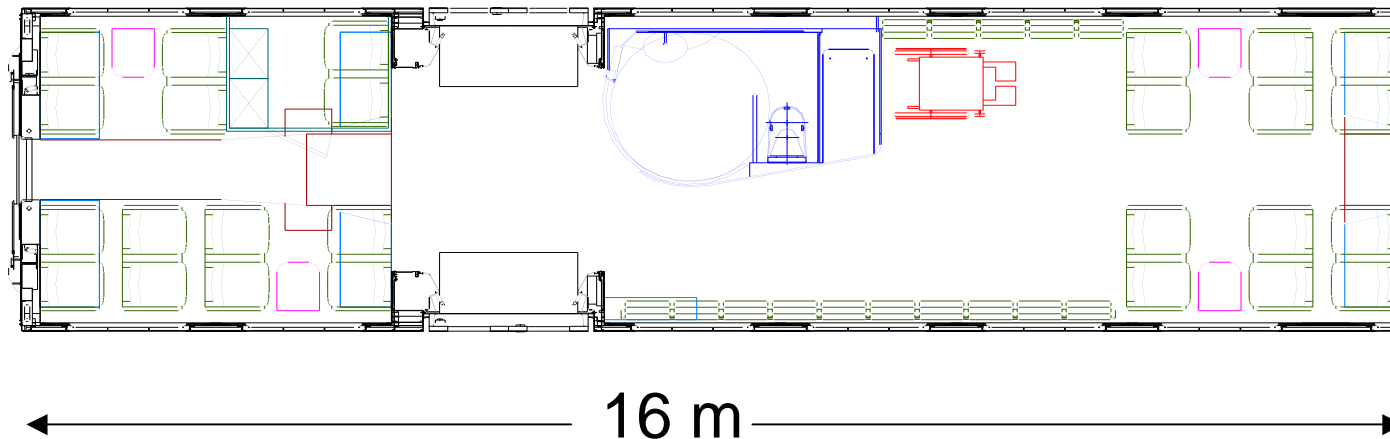
Pågatågen 2009

fr	Syfte
	Inspiration
	Stolar
	Layout
	Belysning
	Bagagehyllor
	Information
	Föranutrymmet
	Handikaptoalett
	Flexutrymme
	Tågmästarutrymme
	Golv och mittgång
	Front
	Exteriör: Färger och grafik
t	Interiör: Färger och material

Next generation of Pågatågen

Working process 2007

A full scale mock up was built in Malmö





Next generation of Pågatågen

Working process 2007

A full scale mock up was built in Malmö

” made to visualise, materialise and evaluate the vehicle with respect to design, volume, material- and colour combinations plus availability for passengers before the serial production is started.

- *The considered groups are the following, among others:*
- *Skånetrafiken personnel*
- *Disabled organisations*
- *Operator*
- *On board staff*
- *Passenger representatives/organisations”*

Skånetrafiken



Next generation of Pågatågen

Working process 2007

A full scale mock up was built in Malmö

1. A "white" model, shown in June for



Next generation of Pågatågen

Working process 2007

A full scale mock up was built in Malmö

1. A "white" model, shown in June for

- employees at Skånetrafiken
- employees at Arriva
- PRCs
- customers



Next generation of Pågatågen

Working process 2007

A full scale mock up was built in Malmö

1. A "white" model, shown in June for

- employees at Skånetrafiken
- employees at Arriva
- PRCs
- customers
- 1st questionnaire



Next generation of Pågatågen

Working process 2007

A full scale mock up was built in Malmö

1. A "white" model, shown in June for

- employees at Skånetrafiken
- employees at Arriva
- PRCs
- customers
- 1st questionnaire
- modifications



Next generation of Pågatågen

Working process 2007

A full scale mock up was built in Malmö

2. A "coloured" model, shown in August for

- employees at Skånetrafiken
- employees at Arriva
- PRCs
- customers
 - 2nd questionnaire



Next generation of Pågatågen

Working process 2007

A full scale mock up was built in Malmö

2. A "coloured" model, shown in August for

- employees at Skånetrafiken
- employees at Arriva
- PRCs
- customers
- 2nd questionnaire
- independant assessment



Next generation of Pågatågen

Working process 2007

A full scale mock up was built in Malmö

2. A "coloured" model, shown in August for

- employees at Skånetrafiken
- employees at Arriva
- PRCs
- customers
 - 2nd questionnaire
 - independant assesment
 - modifications

Skånetrafiken



Next generation of Pågatågen

Working process 2007

A full scale mock up was built in Malmö

3. A "final" model, shown in September for

- employees at Skånetrafiken
- employees at Arriva
- PRCs
- customers
 - 3rd questionnaire
 - modifications



Next generation of Pågatågen

Working process 2007

4. "Design Freeze" 31st of October



Next generation of Pågatågen

Working process 2007

4. "Design Freeze" 31st of October

but **lots** remained to be done

Next generation of Pågatågen

Working process 2007 =>

So far 123 meetings!

- 28 Project Meetings
- 23 Technical Meetings
- 24 Quality Meetings
- 13 Documentation Meetings
-
-

Next generation of Pågatågen



Skånetrafiken

...this beauty!



Skånetrafiken

Next generation of Pågatågen

Alstom Coradia Lirex Skåne



Skånetrafiken

Next generation of Pågatågen

Foreseeable, light, available



Skånetrafiken

Next generation of Pågatågen

Comfortable seats



Skånetrafiken

Next generation of Pågatågen

Ligthing is both comfort



Skånetrafiken

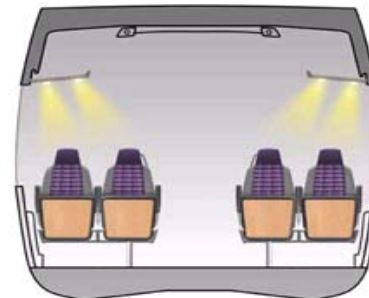
Next generation of Pågatågen ... and safety



Skånetrafiken

Next generation of Pågatågen

For both work and rest



Skånetrafiken

Next generation of Pågatågen

For all



Skånetrafiken

Next generation of Pågatågen

For all



Skånetrafiken

Next generation of Pågatågen

For all



Skånetrafiken

Next generation of Pågatågen

Important details

- comfortable seats



There will be a table here as well!



Skånetrafiken

Next generation of Pågatågen

Important details

- toilet
 - adopted for PRM
 - door-is-locked signal
 - emergency speech unit
 - alarm push buttons
 - nursing table

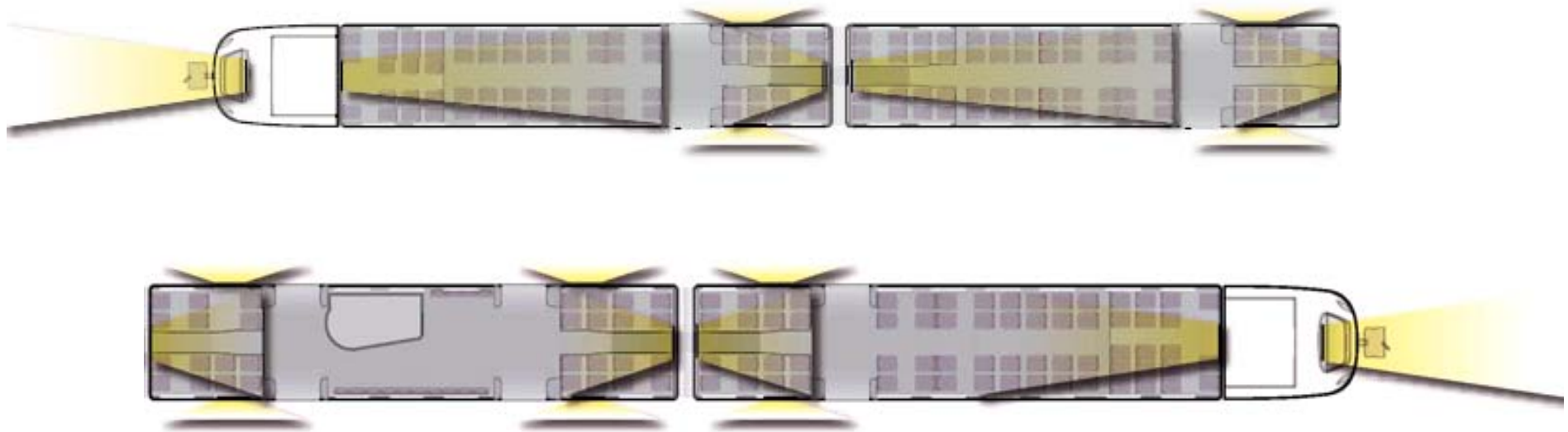


Skånetrafiken

Next generation of Pågatågen

Important details

Good information



Next generation of Pågatågen

Important details

- infotainment



Skånetrafiken



Next generation of Pågatågen

Important details

- exterior destination calls



Next generation of Pågatågen

Important details

- exterior destination calls
- "soundhouse"/beacon to doors



Next generation of Pågatågen

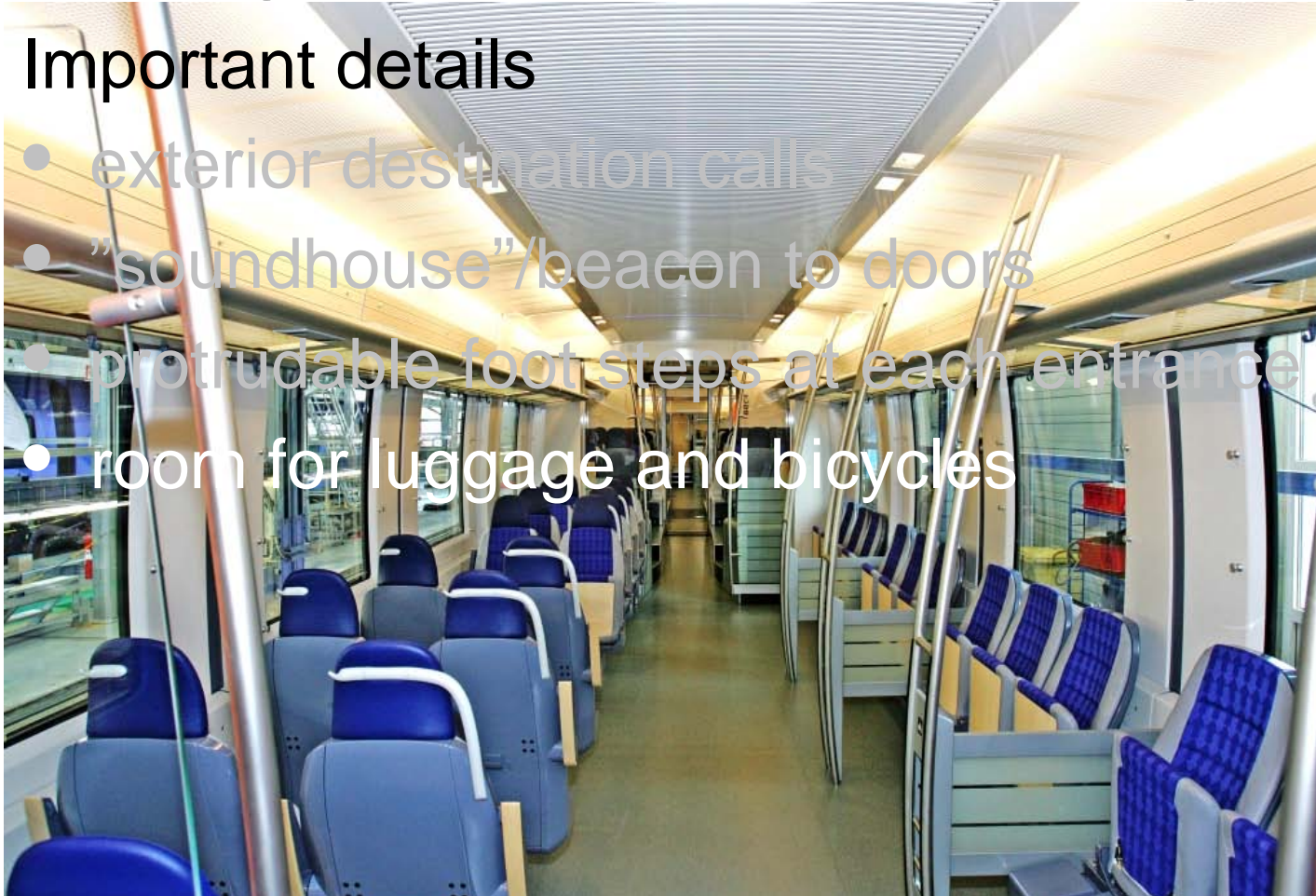
Important details

- exterior destination calls
- "soundhouse"/beacon to doors
- protrudable foot steps at each entrance

Next generation of Pågatågen

Important details

- exterior destination calls
- "soundhouse"/beacon to doors
- protrudable foot steps at each entrance
- room for luggage and bicycles





Next generation of Pågatågen

Important details

- air conditioning



Next generation of Pågatågen

Important details

- air conditioning
- good loud speakers



Next generation of Pågatågen

Important details

- air conditioning
- good loud speakers
- hearing loop



Next generation of Pågatågen

Important details

- air conditioning
- good loud speakers
- hearing loop
- repeater for mobile phones



Next generation of Pågatågen

Important details

- air conditioning
- good loud speakers
- hearing loop
- repeater for mobile phones
- **video surveillance**

Next generation of Pågatågen

Important details

- air conditioning
- good loud speakers
- hearing loop
- repeater for mobile phones
- video surveillance
- 220 V at every seating row



Next generation of Pågatågen



- silent compartment



Skånetrafiken

Next generation of Pågatågen

Important details

- emergency speech units



Next generation of Pågatågen

Important details

- Train master compartment



Skånetrafiken

Next generation of Pågatågen

Important details

- Train master compartment
 - 2 seats
 - lockable cupboards for personal belongings
 - monitor for video surveillance
 - communication-to-driver device
 - 220 V sockets
 - fridge
 - microwave



Skånetrafiken

Next generation of Pågatågen

Important details

- Driver's cab
 - ergonomic and pleasant
 - in cooperation with drivers and union





Next generation of Pågatågen

Deliveries 2009

- 30th of November: 3 trains
- 8th of December: 1
- 14th of December: 1
- 18th of December: 1

Next generation of Pågatågen

Deliveries 2009-2012

- 30th of November: 3 trains
 - 8th of December: 1
 - 14th of December: 1
 - 18th of December: 1
 - 2010: 22
 - 2011: 15
 - 2012: 6
- 49

Next generation of Pågatågen

Deliveries 2009-2012

- 30th of November: 3 trains
 - 8th of December: 1
 - 14th of December: 1
 - 18th of December: 1
 - 2010: 22
 - 2011: 15
 - 2012: 6 **?!?!**
- 49 **?!?!**



Nästa generation Pågatågen

Working process 2007 =>

so **lots** remain to be done

Skånetrafiken

20

**6 years in ~~30~~ minutes -
Creating a modern regional train**



Thank you for your attention!