

Supply, Procurement & Logistics Division

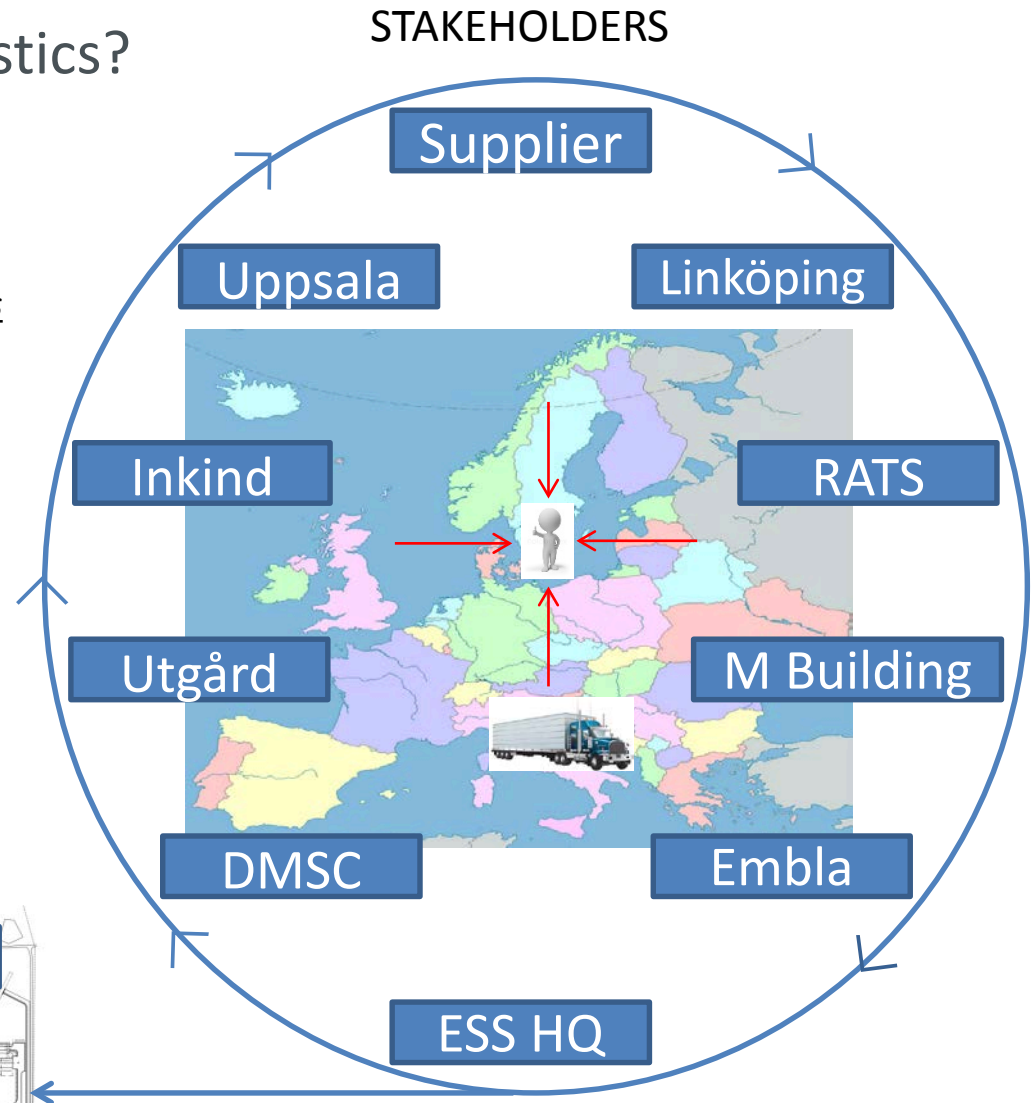
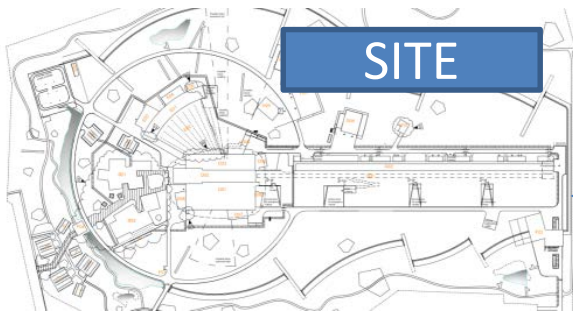
Logistics & Storage (Temporary and Long-term)

Jörgen Larsson, Senior Logistics Officer
Group Leader Warehouse & Logistics



Wikipedia

- Transportation
- Storage
- Unloading/Loading
- Coordination
- Information
- Cost efficiency
- Consultancy





Statement

ESS Logistics is as prepared as the feed back and data gathering process has allowed us

– please help us fill the gaps!

- **Data gathering process**
- Scope of challenge
- Risk mitigation

Shipment data gathering process

ESS Work Package leaders expectations

WP	Project	WP Title	ESS contact	Site Area Managers	Scope of work	Stakeholder	Contact	INCOTERM / Address	Estimated volume
1	Accelerator	Spoke Cryomodules	Christine Darve	Nick Gais	13 pcs / Spoke Cryomodules	INFIN/IN/INO	Sebastian Beusen	DAP Orsay to UPSALA / EXW UPSALA to LUND	
5	Accelerator	Elliptical Cryomodules	Christine Darve	Nick Gais	Neobium shipping	ESS/IN/INO	Håkan Danared	FCA JPVCH to SE + SE to DE and DE to IT/GB	
5	Accelerator	Elliptical Cryomodules	Christine Darve	Nick Gais	21 pcs/ High Beta cryomodules	SACLAY/IN/INO	Pierre Bosland	FCA SACLAY	
5	Accelerator	Elliptical Cryomodules	Christine Darve	Nick Gais	8 pcs / Medium Beta cryomodules	SACLAY/IN/INO	Pierre Bosland	FCA SACLAY	
2	Accelerator	Accelerator physics	M.Ebrahi		No hardware deliveries according to email from M. Ebrahi on the 29/6-2016	N/A	N/A	N/A	N/A
3	Accelerator	Normal conducting front end	Walter Wittmeier	Nick Gais	ION Source LEIST	INFN, Catania/INO	Frank Hellström	Walter Benkommer med detta	T80 after contracts signed with industrial partners
3	Accelerator	Normal conducting front end	Walter Wittmeier	Nick Gais	RFQ	SACLAY/INO	Georg Hulla	Walter Benkommer med detta	T80 after contracts signed with industrial partners
3	Accelerator	Normal conducting front end	Walter Wittmeier	Nick Gais	MEBT	ESS/Bilbao/INO	Georg Hulla	Walter Benkommer med detta	T80 after contracts signed with industrial partners
3	Accelerator	Normal conducting front end	Walter Wittmeier	Nick Gais	Drift Tube Liner	INFN, Lenano	Frank Hellström	Walter Benkommer med detta	T80 after contracts signed with industrial partners
6	Accelerator	Beam delivery systems	L. Alonso	Nick Gais	Raster Scanning Magnets (RSM) system (Beamline elements, cables and power supplies)	Danhyik, DK	S. Molier	DDP Lund (address TBD)	15m3
7	Accelerator	Beam delivery systems	L. Alonso	Nick Gais	Gamma blockers	NCL, FL, IN/INO	S. Molier	TBD - no agreement in place (Address in Lund TBD)	2m3 / 200kg
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Ionization Chamber BLM's	CERN / "Imixio"	DAP Lund - address TBD		800 monitors / weight and volume TBD
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Neutron Beam Loss Monitors	SACLAY/INO	DAP Lund - address TBD		40 detectors and electronic equipment
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Bunch Shape Monitors (BSM)	Russian Institute for Nuclear Research, Russia	Alexander Eschenko	FCA Moscow Airport	2 monitors / weight and volume TBD
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Non Invasive Profile Monitors	SACLAY/INO	DAP Lund - address TBD		Approx. 20 monitors / 3 batches / weight and volume TBD
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Equipment to be installed in BP1P (Target WP 4)	Osaka University/INO	DAP ESS Bilbao (Madrid?)		weight/volume TBD
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Target Imaging System	Osaka University/INO	TBD - Lund / Address TBD		weight/volume TBD
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Components to Target WP4 / BP1P - Monitors	Procurement/ IN/INO TBD	TBD - Lund / Address TBD		weight/volume TBD
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Components to Target WP4 / BP1P - Grid	Procurement/ IN/INO TBD	TBD - Lund / Address TBD		weight/volume TBD
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Insertable Beam Stopper	ESS/Bilbao/INO TBD	DAP Lund - address TBD		0.5x1.0x1.5 m steel weight TBD
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Temporary Commissioning Dump	CERN / Procurement	FCA according to mail dated 31/8-2016 from Mirko Manega		0.5x1.0x1.5 m steel weight TBD
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Wire Scanner Sensor/Actuators	Arhus University / IN/INO TBD	TBD - Lund / Address TBD		16 pcs approx 20 pallets
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Wire Scanner Readout Systems	Eletra, GR / IN/INO	DAP Lund - address TBD		16 boxes on 4.5 pallets
7	Accelerator	Beam diagnostics	A. Jansson	Nick Gais	Asorted electronics equipment	Procurement	TBD - Lund / Address TBD		1 large order delivered in several batches with focus on Q1 2018 and several smaller orders over time
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	Medium beta Klystron Deliveries	INO/INO TBD - Site	M. Jensen (A. Sunesson)	INCOTERM TBD - Site	40 deliveries of 2x2.5x6 m, 40 deliveries of 1 pallet with additional equipment
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	Klystron Ion Pump HV Cable	Procurement	S. Calic	INCOTERM TBD - SPL temporary storage, then SPL, when not	5 spools, 200 kg ea, 1x1x0.5 m ea.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	Klystron Ion Pump Connectors	Procurement	S. Calic	INCOTERM TBD - SPL and then Site	0.5x0.5x0.5 m
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	Klystron Transport Truck	Procurement	S. Calic	INCOTERM TBD - Site	1.5x3.5x2.5m, 2500 kg
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	70K Klystrons for TS2	Procurement	C. Manelli (M. Jensen)	INCOTERM TBD - Site	2 deliveries, 2x2.5x6 m ea. and pallets with aux components
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Circulators for TS2	Procurement	R. Yogi	INCOTERM TBD - Site	2 pallets, 1.2x1.2x0.8 m ea.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Dummy Loads for TS2	Procurement	R. Yogi	INCOTERM TBD - Site	4 pallets, 1x1.5x0.8 m ea.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	Variable Power Dividers for TS2	Procurement	R. Yogi	INCOTERM TBD - Site	2 deliveries, 3x3.5x0.8 m ea.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF OS components for TS2	Procurement	R. Yogi	INCOTERM TBD - Site	Multiple deliveries (ev. 12 of 0.6x0.6x0.6 m, 6 pallets 1.2x1.2x1.5 m ea.)
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	Driver amplifiers for TS2	Procurement	B. Lagouge	INCOTERM TBD - Site	2 of 1.2x0.8x0.8 m
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	Aux. Power Supplies for TS2	Procurement	S. Calic	INCOTERM TBD - Site	6 of 1x1x0.6 m, 2 of 0.8x0.8x1 m, 2 pallets of additional equipment
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RFDS Support Structure for TS2	Procurement	S. Esköm (S. Calic)	INCOTERM TBD - Site	3 of 0.5x0.5x0.5 m, 3 pallets of aux. components
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RFDS Modulator Oil for TS2	Procurement	G. Gdargan (S. Calic)	INCOTERM TBD - Site	3x1000 liter (2 of 1x1x1 m)
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	Cables for TS2	Procurement	S. Esköm (S. Calic)	INCOTERM TBD - Site	Many diff. spools, 76 pallets
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	Aux cabinets, tools and equipment for TS2	Procurement	S. Esköm (S. Calic)	INCOTERM TBD - Site	Many deliveries
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	LPS for TS2 klystrons	Procurement	R. Montano	INCOTERM TBD - Site	
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	LRF Systems for TS2	Procurement	A. J. Johansson	INCOTERM TBD - Site	
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner	ICC Partner	S. Calic		28 deliveries
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner	Eletra Sincrotrone Trieste	M. Jensen		Each delivery contains:
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner	Infly' Alessandro Fabris	A. Sunesson	DAP Lund - SITE	1) Two crates 2x2x3 m
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner	Cristina Pasotti"			2) One crate 3x2x3 m
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				3) Two pallets with additional equipment
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				120 deliveries - plus spare units
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				Each contains:
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				1) Fast Interlock Module - MicroTCA.4 FPGA Board Mid-Size + FMCs
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				2) Slow Interlock Module 10U rack approx.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				8) Conditioning board 10U-2U rack
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				6 deliveries - plus spare units
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				Each contains:
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				1) Fast Interlock Module - MicroTCA.4 FPGA Board Mid-Size + FMCs
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				2) Slow Interlock Module - 10U rack approx.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				25 deliveries of 2.5m x 2m x 2m, delivery after every two weeks
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				126 deliveries of 1.7m x 1.3 m x 1 m, Batch of 8 will be delivered after every two week
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				126 deliveries of 1.7m x 2 m x 1 m, Batch of 8 will be delivered after every two week
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				25 deliveries of 6m x 6m x 2m, delivery after every two weeks
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				25 deliveries of 6m x 6m x 2m, delivery after every two weeks
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				25 deliveries of 3m x 2m x 2m, delivery after every two weeks
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				50 deliveries of 2m x 2m x 2m, delivery after every two weeks
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				25 deliveries of 2m x 2m x 2m, delivery after every two weeks
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				25 deliveries of 4 m x 1 m x 1 m, delivered after every two weeks
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				25 deliveries of 6m x 6m x 3 m, delivered after every two weeks
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				25 deliveries of 2m x 2m x 2m, delivered after every two weeks
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				6 deliveries of 2x2.5x6 m, 5 pallet plus additional equipment each
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				40 deliveries of 2x2.5x6 m, 40 deliveries of 1 pallet with additional equipment
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				1 unit 19 inch wide, 40 cm high crates.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				8 units 19 inch wide, 40 cm high crates.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				84 units 19 inch wide, 40 cm high crates.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				1 unit 19 inch wide, 40 cm high crates.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				8 units 19 inch wide, 40 cm high crates.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				25 units 19 inch wide, 40 cm high crates.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				40 deliveries of 2x2.5x6 m, 40 deliveries of 1 pallet with additional equipment
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				80 deliveries of 3x0.5x0.5 m
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				1 delivery 1.2 pallets.
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				20-40 pallets grouped in 4
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				40 deliveries of 2x2.5x6 m, 40 deliveries of 1 pallet with additional equipment
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				40 deliveries of 1 Pallet 1.2x0.8x0.8 m
8	Accelerator	RF Systems	M. Jensen (A. Sunesson)	Edgar Sargoyan	RF Partner				7 deliveries of 1 Pallet 1.2x0.8x0.8 m

Shipment data gathering process – Inkind partners challenges

4	Accelerator	Spoke Cryomodules	Christine Darve	Nick Gazis	13 pcs / Spoke Cryomodules	IPNOrsay/INKIND	Sebastian Bousson	DAP Orsay to UPPSALA /EXW UPPSALA to LUND		Help to design Transport cages (3) + Transport/insurance + secure unloading/loading in Uppsala	ULISSE (CNRSS Logistics provider)	2017-08 / Uppsala	2018-01 / RATS, Lund	2018-10 / Tunnel
1	Accelerator	Cryogenics	P. Arnold	Ila Sjöholm	Spoke Linac	IPNOrsay/INKIND		DAP Site or TBD?	20 Units / 2 per truck / 10 trucks	Coordinate DAP shipment to SITE over time - need to get in contact with supplier to get more details related to estimated volume and contents	4PL / Skanska	2017 Q4 until 2018 Q2		

Meetings with in kind partners

Performed

- ESS Bilbao
- Science & Technology Facilities Council (STFC) – Rutherford Appleton Laboratory
- Institut de Physique Nucléaire (IPNO)
- Commissariat à l'énergie atomique et aux énergies alternatives (CEA)
- Istituto Nazionale di Fisica Nucleare (INFN) in Milan, Catania & Legnaro
- Elettra

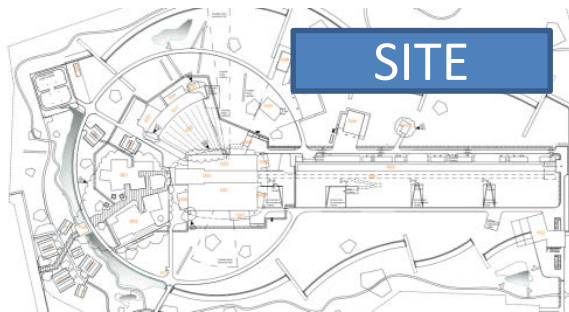
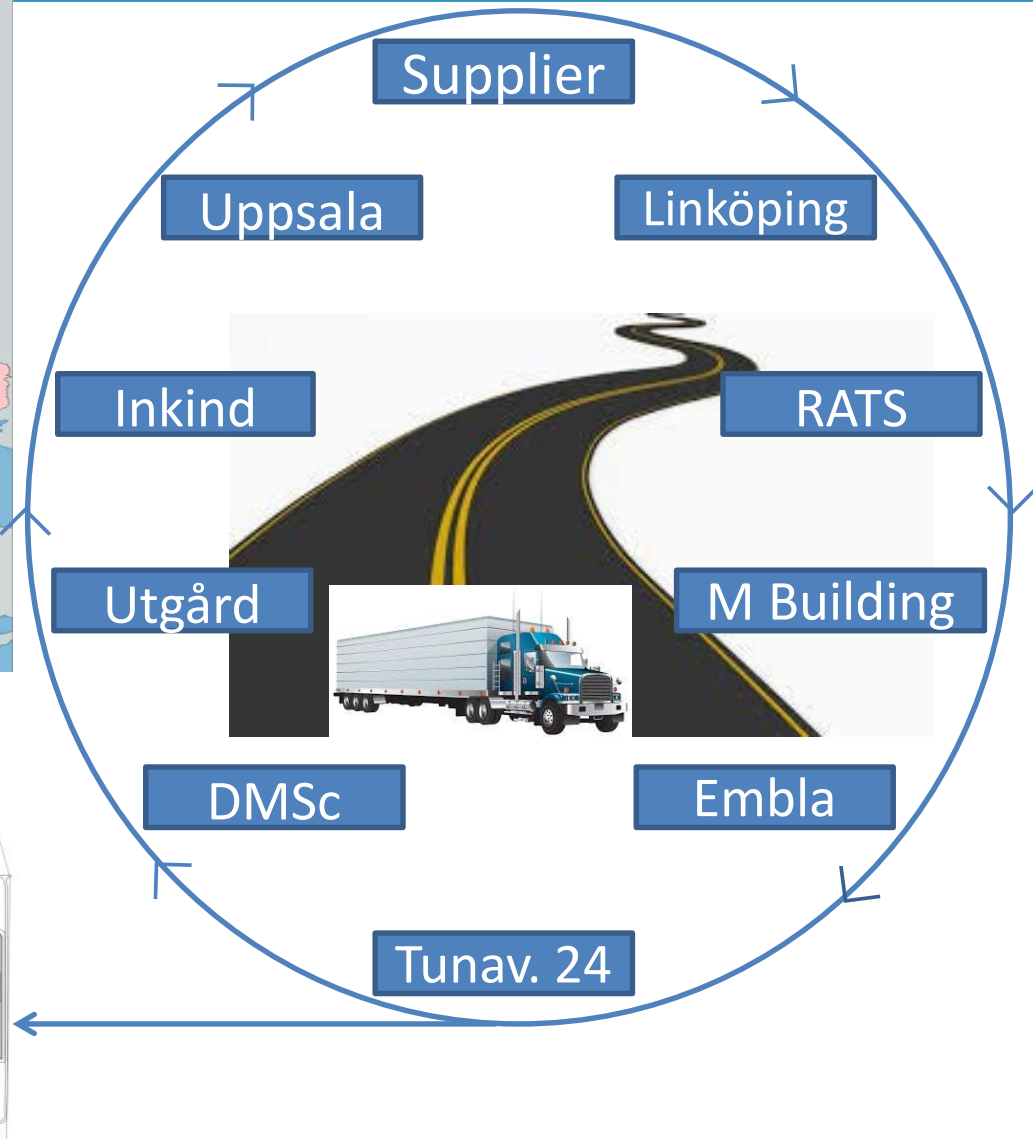
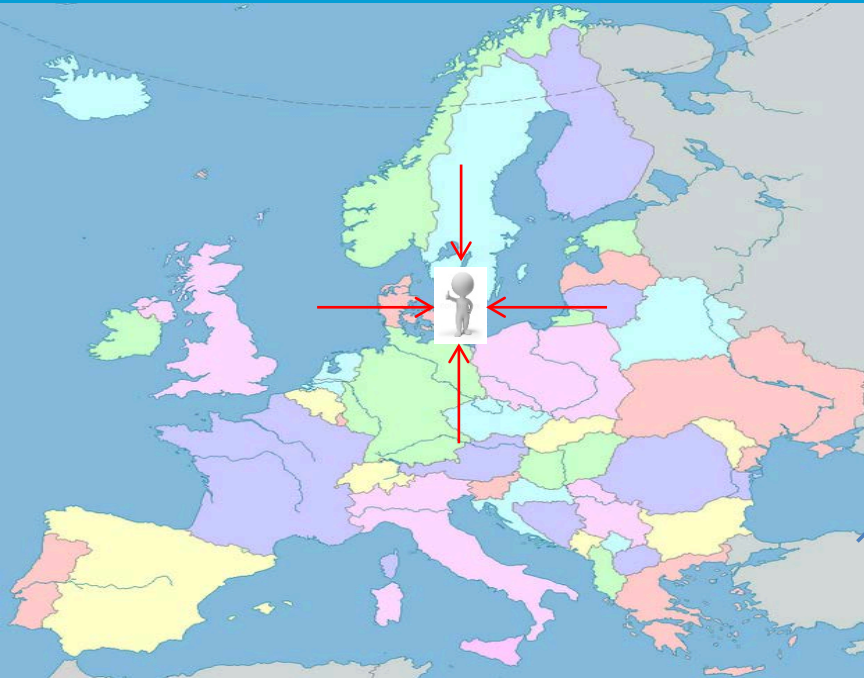
TBD

- Warsaw University of Technology
- Wrocław University of Science and Technology
- Nuclear Physics Institute of the Czech Academy of Science (UJF CAS)
- NUVIA

- Data gathering process
- **Scope of challenge**
- Risk mitigation

- Data gathering process
- Scope of challenge
- **Risk mitigation**

Logistics being the “gate keeper”



Routines for delivery to ESS Construction SITE

Purpose:

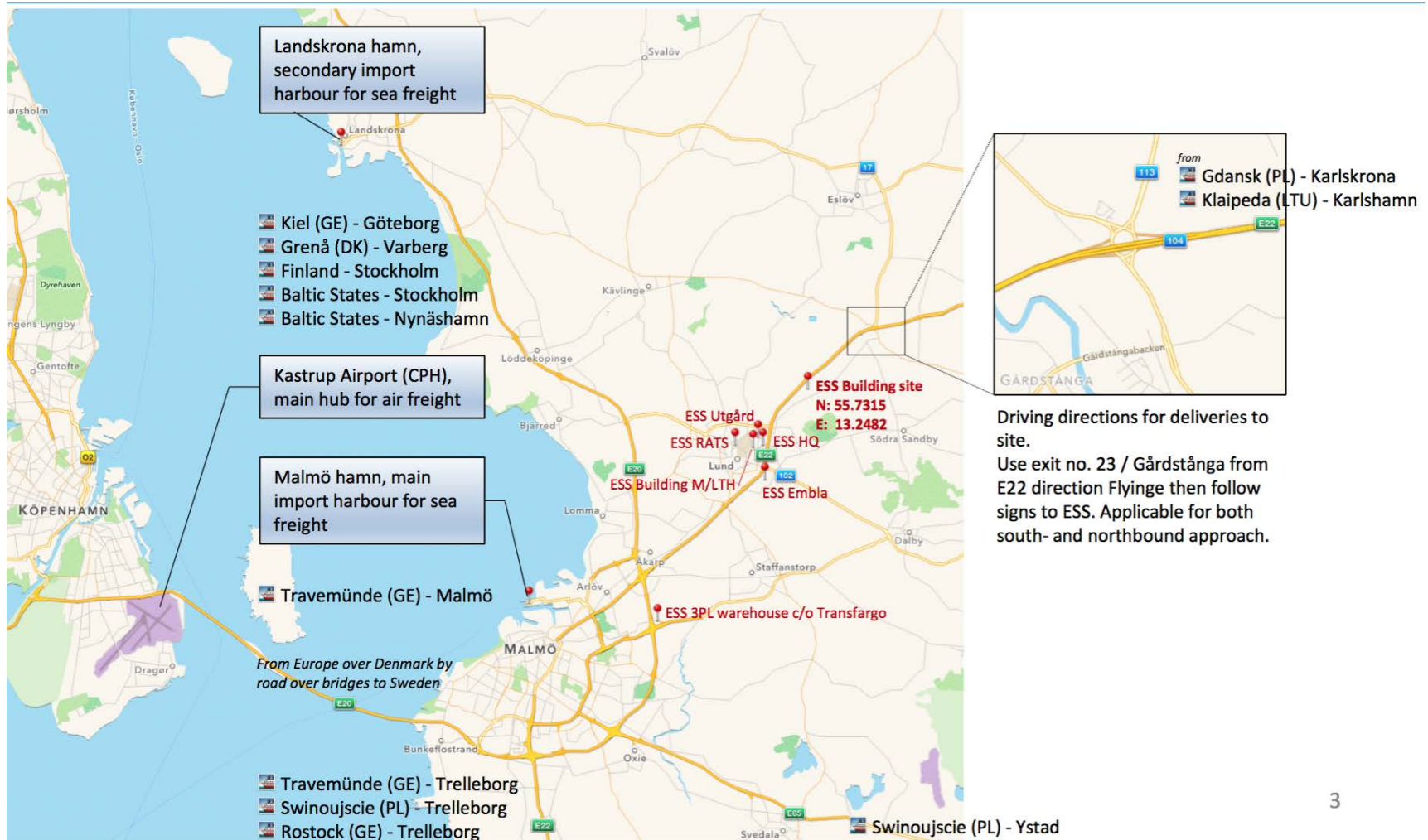
- To provide a structured handling of deliveries to ESS Constructions SITE
- To be able to enhance the level of service towards the requesters

Who to contact?

Elin Boldt
Junior Logistics Officer
+46 (0)73-0881744
Elin.boldt@esss.se
logistics@esss.se

Routines:

- Delivery related to Purchase Order is stated on order confirmation to contact logistics@esss.se 48h prior delivery. In other cases it is stated in Technical Annex to contact logistics@esss.se 48h prior delivery
- Logistic officer contact the shipper for information such as number of packages, size, weight, delivery date and time
- Logistic officer contact the consignee for information such as contact person, unloading zone and eventual support with unloading at SITE
- If additional support with unloading is needed, Logistic officer coordinates and book the unloading
- Logistic officer book the SLOT time

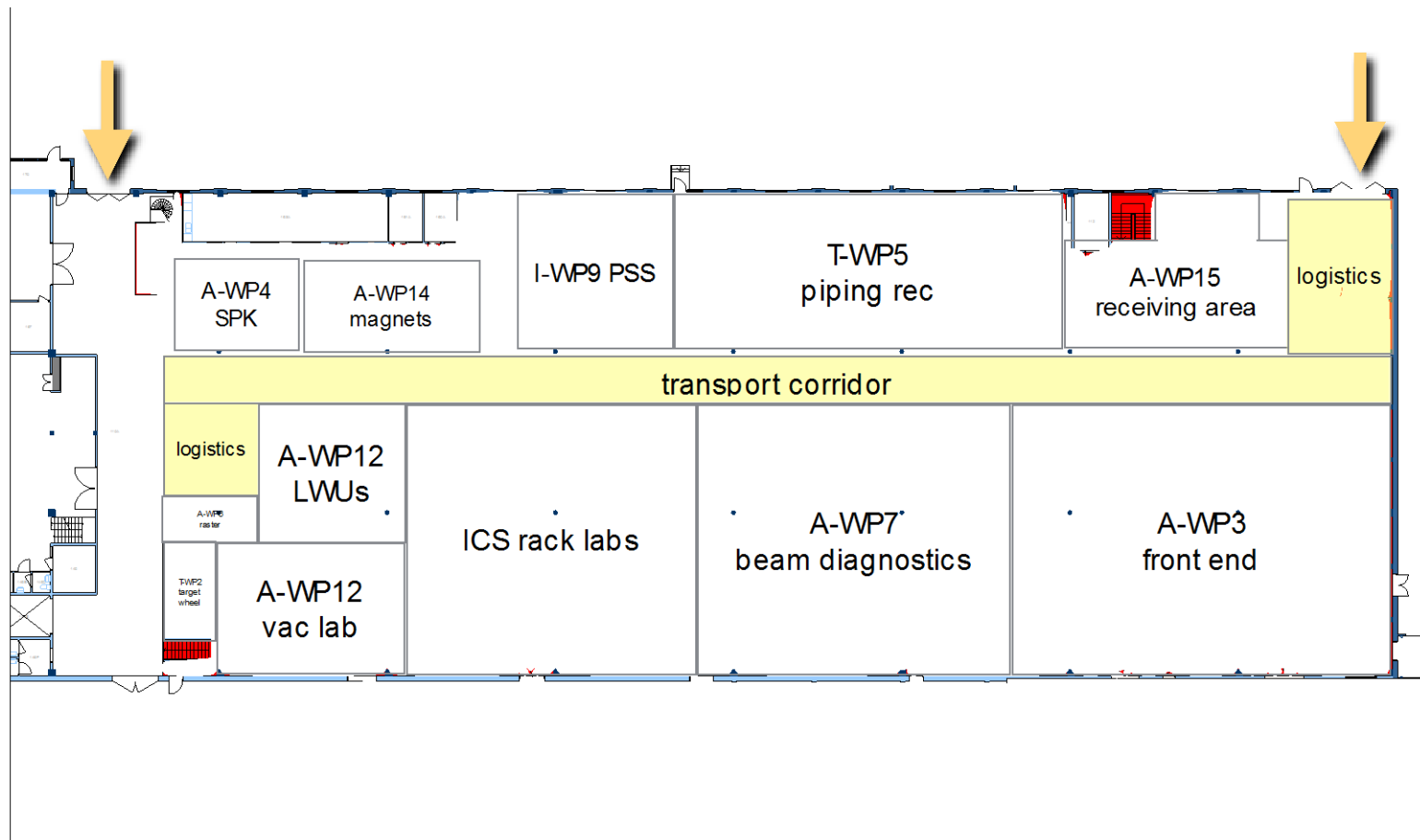


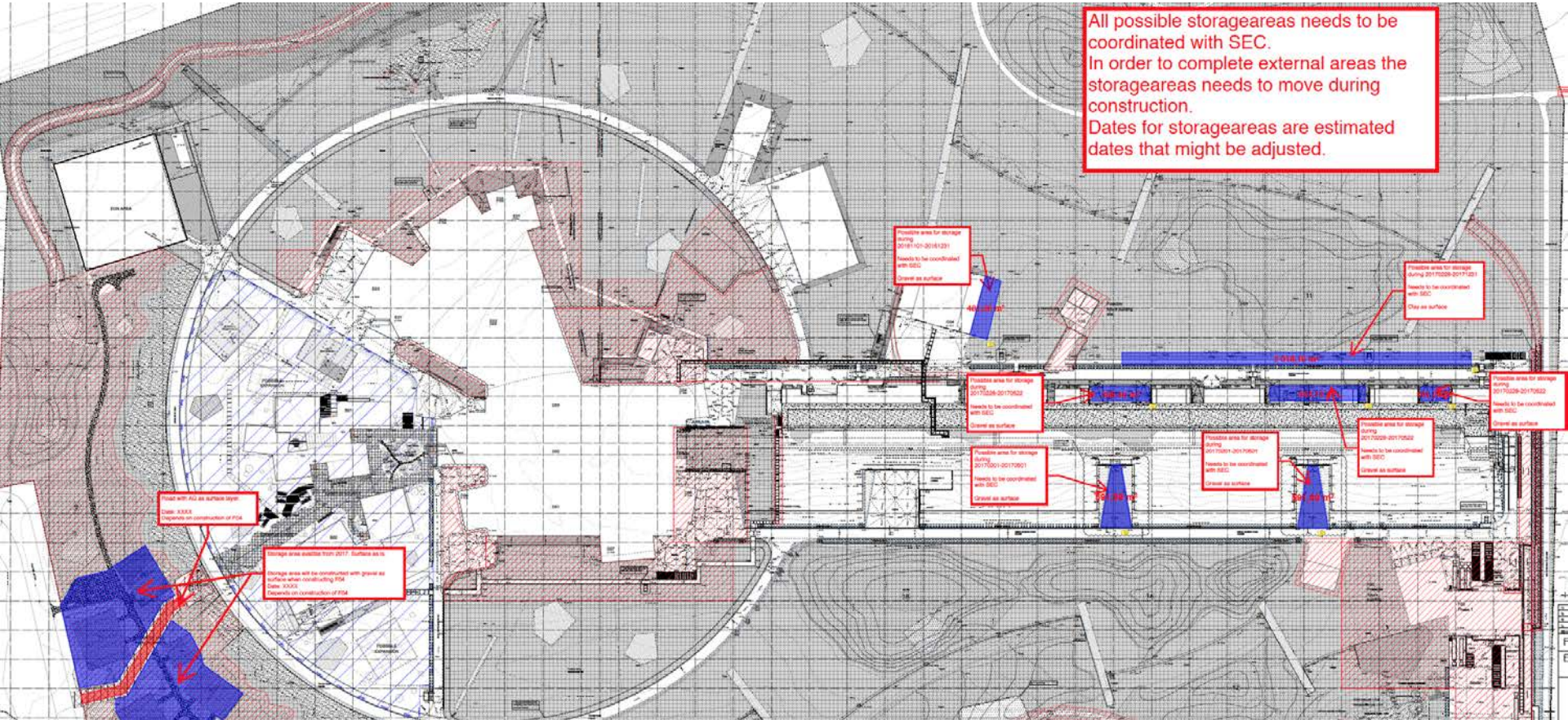
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Short & Long term storage in place and up and running



RATS in place 20/2-2017 (Receive, Accept, Test & Store)







Statement

ESS Logistics is as prepared as the feed back and data gathering process has allowed us

– please help us fill the gaps!

brightness

And finally, we are flexible and agile!



Thank you!

Jörgen Larsson, Senior Logistics Officer
Supply, Procurement and Logistics Division
jorgen.larsson@esss.se +46 (0) 72 179 2098

