

Digital remote tower, Multiple Remote Tower Centres

Niclas Gustavsson, VP Business Development Saab ATM

SESAR 2020 SHOWCASE



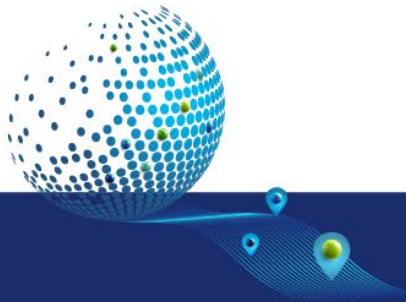
SESAR 2020 PJ05 Wave 2 Validations at Sturup



SESAR 2020 PJ05 Wave 2 V3, 2020-2023

COOPANS

- Three simultaneous airports in one RTM
- Dynamic flexible allocation of airports between RTMs and within each RTM.
- Operational robust handover process
- Advanced workload tool to support handover process



Different setups of Compact RTM



MRTM 1 – 7 (55") screens, positioned in portrait mode



MRTM2 – 2 (82") screens, positioned in landscape mode

As a result of Wave1 (now also in our product), we are now working with virtual panoramas from each airport. The panorama can then be displayed on an arbitrary display surface

The size for each airport on the display area could be changed. The placement of each airport could be changed

Within an airport you could do:

- Digital zooming (very easy)
- Slide panorama left/right (very easy)

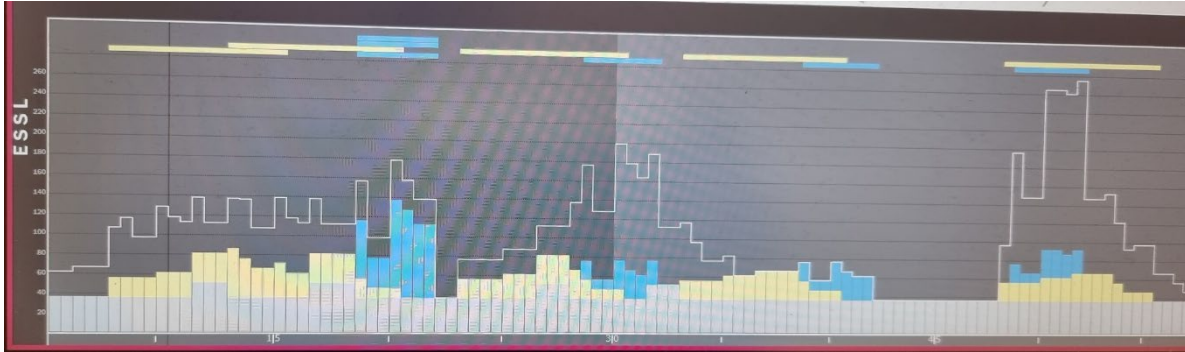


EXE-2.2-V3-COOPANS

- ✘ 6 ATCO with different operational background experience from ACG, CroControl, SDATS, LFV, DFS
- ✘ Four Pseudo pilot positions
- ✘ One Rest-of-the-world position
- ✘ 4 Different aerodromes: Kiruna, Saab, Visby & Malmö
- ✘ 4 different scenarios, 12 runs in total (70 min each)
- ✘ 25 – 30 per MRTM/h up to 6 simultaneous movements
- ✘ Approximately 10% VFR traffic
- ✘ The different environments composed of:
 - airport complexity,
 - controller workload
 - type of traffic (VFR- IFR-mix, ground)



Advanced workload tool



Linköping Departure

	Time 0					
RWY	-6	-4	-2	+2	+4	
IFR 29	1	2	2	3	1	
VFR 29		1	2	3	2	

	Time 0					
RWY	-6	-4	-2	+2	+4	
IFR 11	1	1	2	3	1	
VFR 11		1	2	3	2	

Linköping Arrival

	Time 0					
RWY	-6	-4	-2	+2	+4	+6
IFR 29	1	1	3	1	1	
VFR 29	1	2	3	2	1	

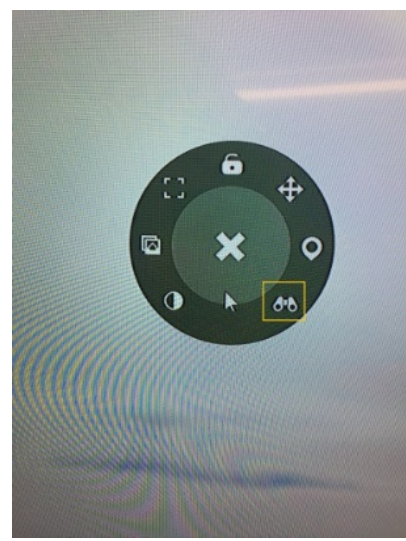
	Time 0					
RWY	-6	-4	-2	+2	+4	+6
IFR 11	1	1	3	2	2	1
VFR 11		1	2	3	2	1

Advanced workload tool:

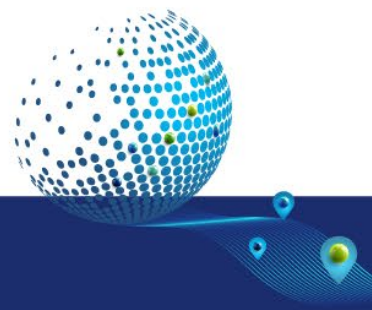
- Load profiles per airport
- Load profiles per runway
- Separate Load profiles arrival/departures
- Extra load on simultaneous movements
- Extra load on two airports in RTM
- Extra load on three airports
- Extra load on ...
-



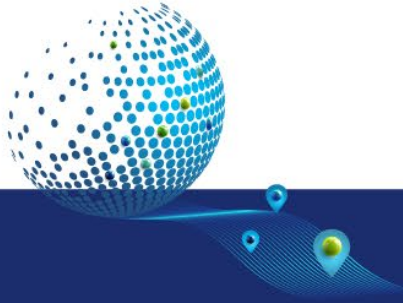
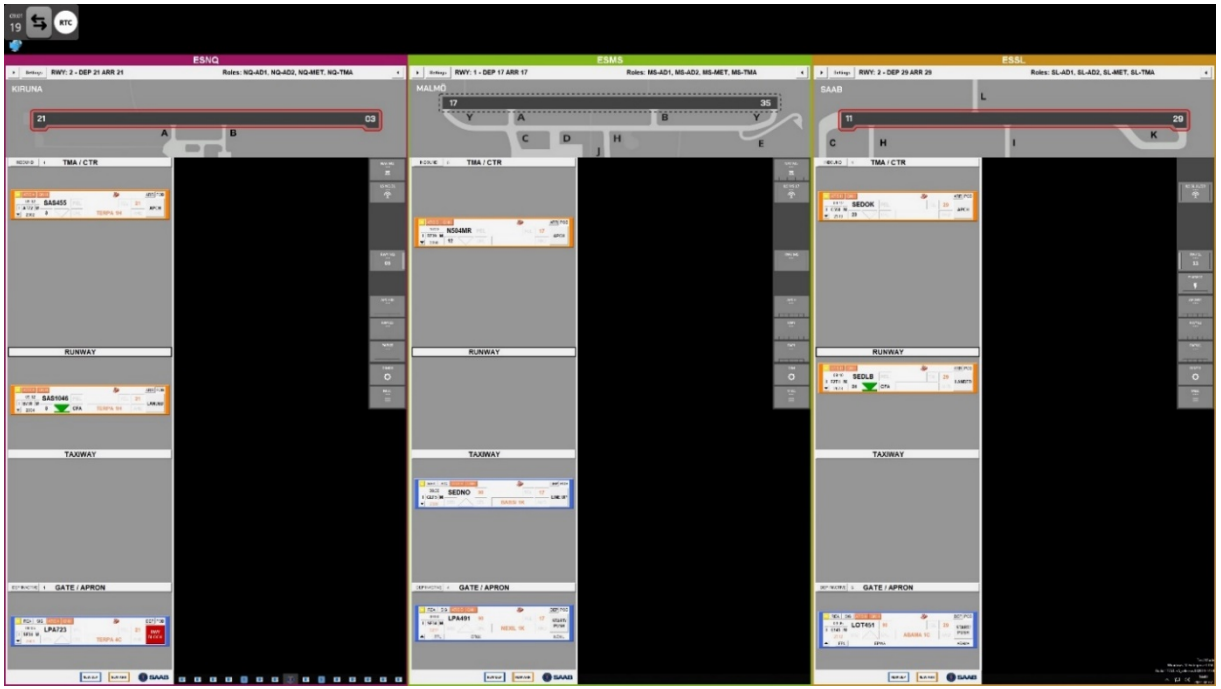
Donut menus in panorama



Menus strenghten by muscle memory



eStrip



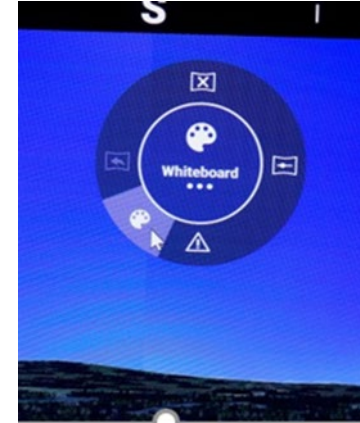
Indication of radio on panorama

(top = air, bottom ground vehicles)

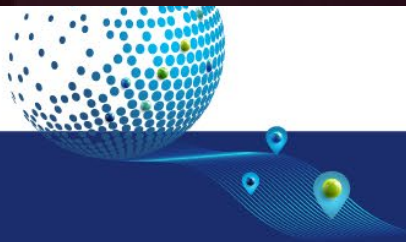
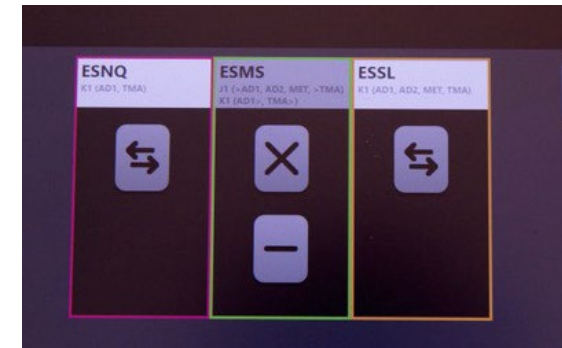
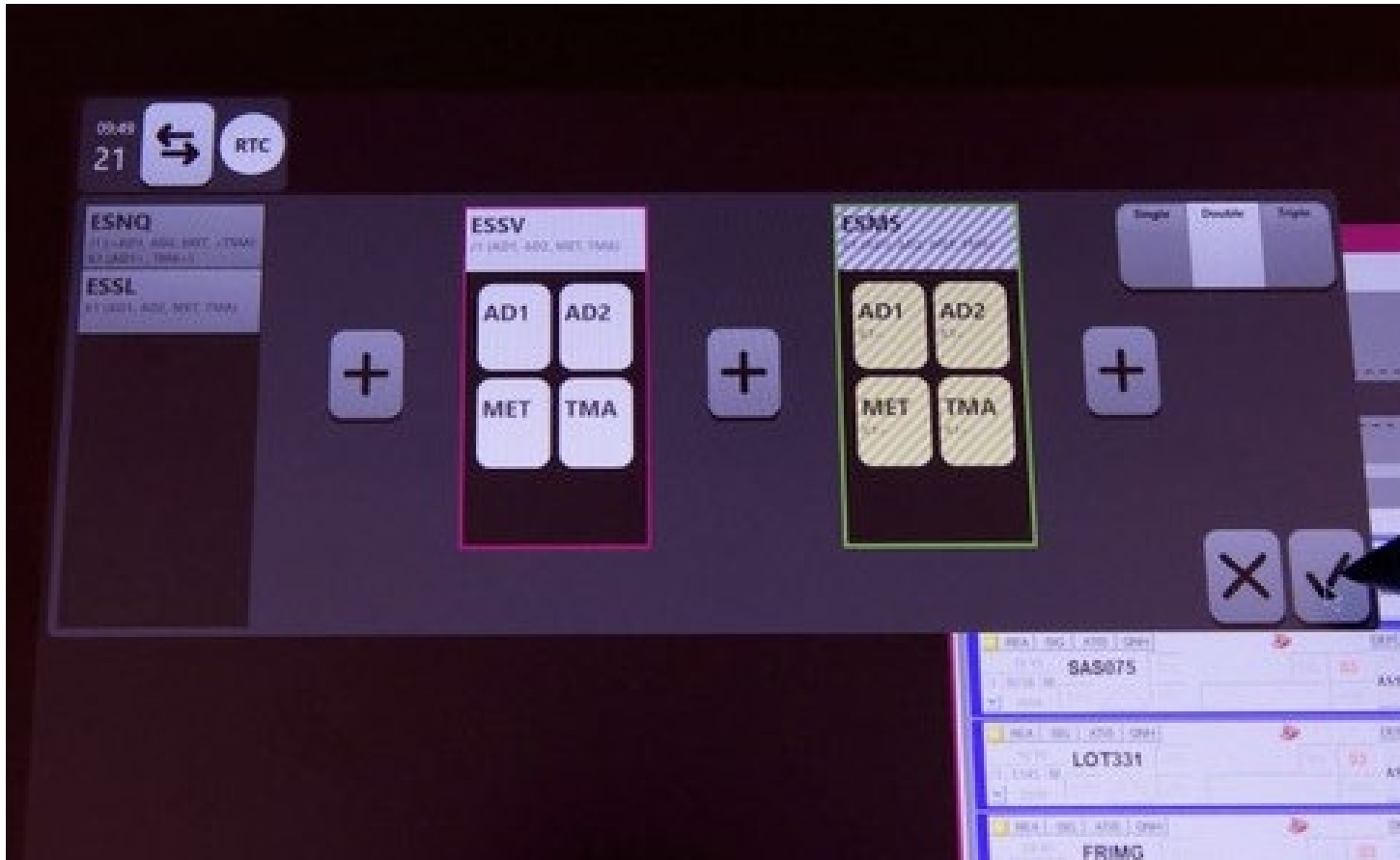


Drawing tool

(used by ATCO for special markups if airport is transferred the markup follow the airport)



Handover with flexible allocation



Research supporting reality...



RTC Sundsvall 2014

RTC Sundsvall 2024 – Multiple
Airport Control



Movie 1:

<https://youtu.be/gbSIOiXONts>



Movie2:

<https://youtu.be/MemvfN2hos8>



**Open Day
29 September
2022
~ 100 visitors**



EXE-2.2-V3-COOPANS
PJ05.35
Multiple Remote Tower
& Remote Tower Centre

