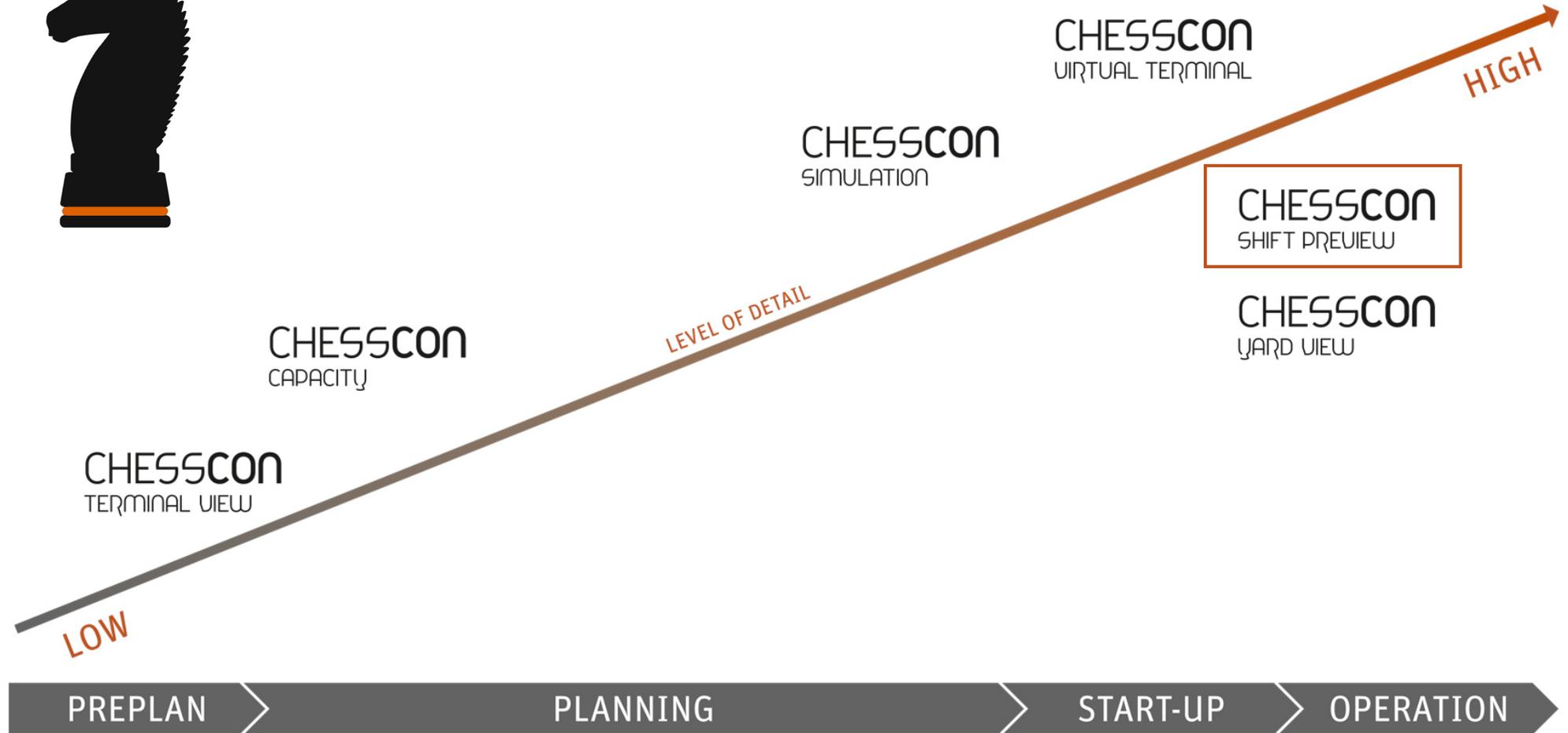




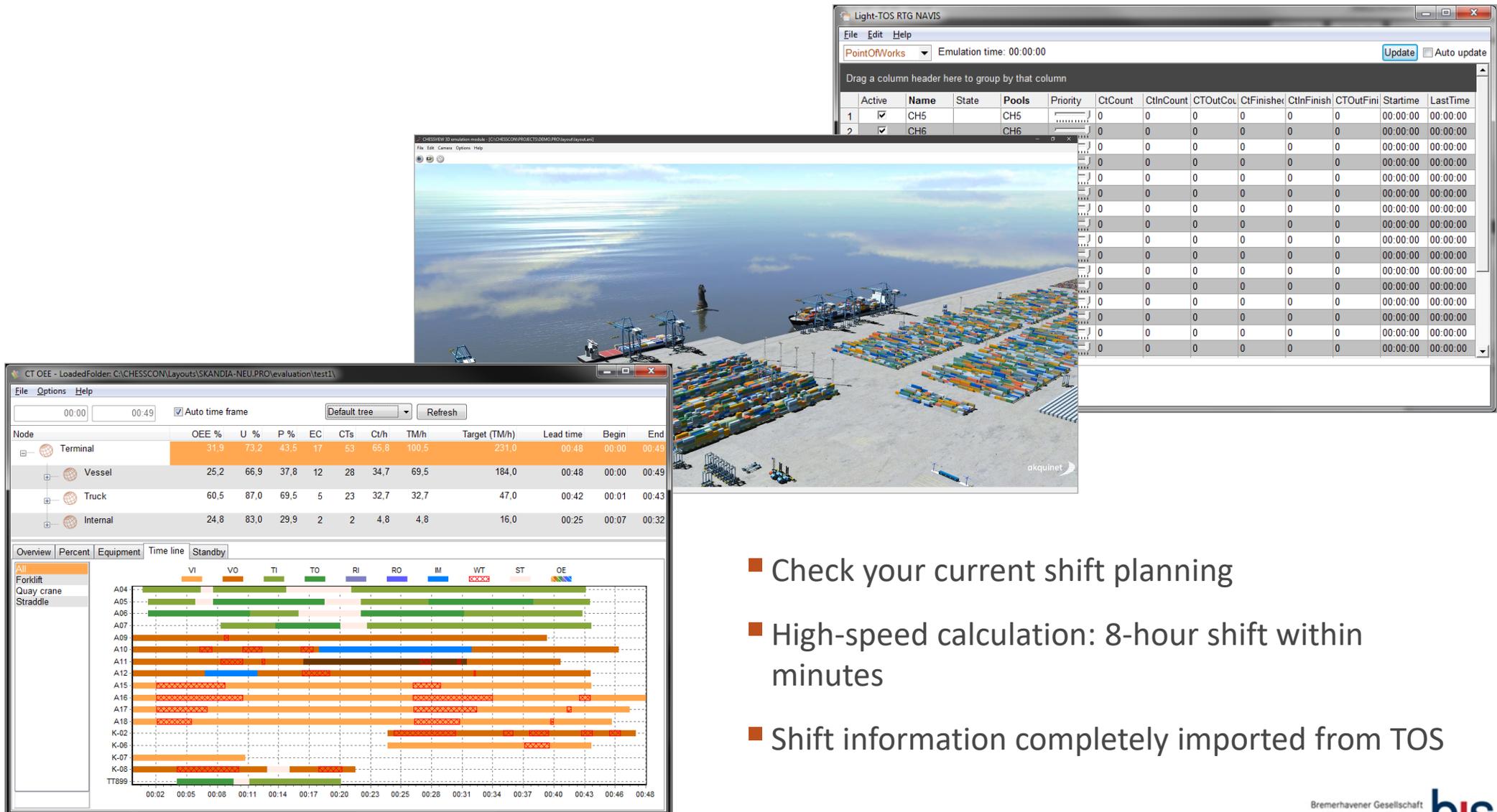
# CHESSCON

## SHIFT PREVIEW

# OPTIMIZATION SOFTWARE FOR CONTAINER TERMINALS



# CHESSCON SHIFT PREVIEW – SIMULATE YOUR FUTURE SHIFT IN MINUTES



The screenshot displays the Chesscon simulation interface, which includes a 3D view of a port terminal, a data table, and a Gantt chart.

**Light-TOS RTG NAVIS Data Table:**

Active	Name	State	Pools	Priority	CtCount	CtInCount	CTOutCou	CtFinishe	CtInFinish	CTOutFini	Startime	LastTime
1	CH5		CH5		0	0	0	0	0	0	00:00:00	00:00:00
2	CH6		CH6		0	0	0	0	0	0	00:00:00	00:00:00

**CT OEE - LoadedFolder: C:\CHESSCON\Layouts\SKANDIA-NEU.PRO\evaluation\test1**

Node	OEE %	U %	P %	EC	CTs	Ct/h	TM/h	Target (TM/h)	Lead time	Begin	End
Terminal	31.9	73.2	43.5	17	53	65.8	100.5	231.0	00:48	00:00	00:49
Vessel	25.2	66.9	37.8	12	28	34.7	69.5	184.0	00:48	00:00	00:49
Truck	60.5	87.0	69.5	5	23	32.7	32.7	47.0	00:42	00:01	00:43
Internal	24.8	83.0	29.9	2	2	4.8	4.8	16.0	00:25	00:07	00:32

**Gantt Chart:** The Gantt chart shows the time allocation for various equipment types (VI, VO, TI, TO, RI, RO, IM, WT, ST, OE) across different nodes (A04, A05, A06, A07, A09, A10, A11, A12, A15, A16, A17, A18, K-02, K-06, K-07, K-08, TT899) over a time period from 00:02 to 00:48.

- Check your current shift planning
- High-speed calculation: 8-hour shift within minutes
- Shift information completely imported from TOS

# CHESSCON SHIFT PREVIEW - MISSION



## SIMULATE AND OPTIMIZE YOUR CURRENT SHIFT PLANNING

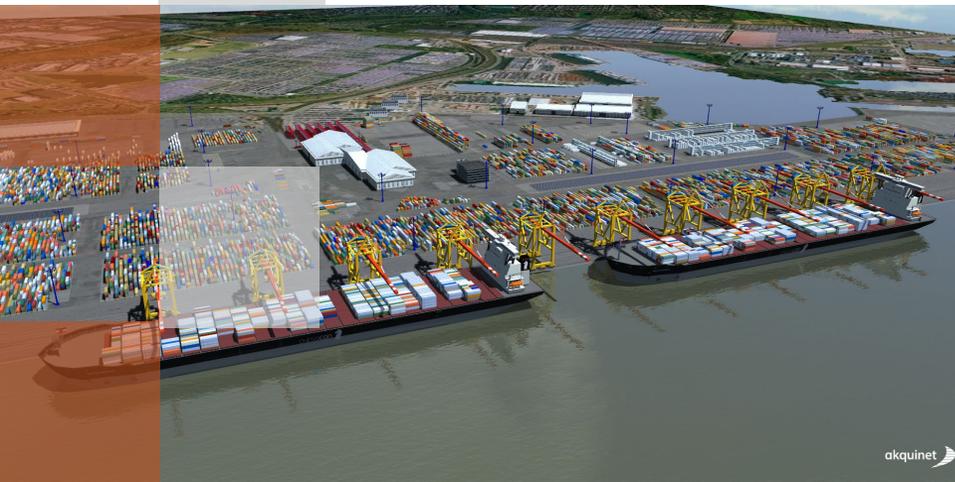
- Optimize deployment of equipment
- Optimize yard allocations
- Avoid yard clashes

## BASED ON YOUR REAL ACTUAL TOS DATA

- Yard layout
- Container inventory
- Work queues
- Equipment allocations (Pools & POWs)
- Yard allocations



# CHESSCON SHIFT PREVIEW – ADVANTAGES



- Easy to use
- Almost all required data imported from the TOS
- Avoid manual interaction by defining standard reactions of the system
- High Speed Simulation
  - More than **3000** containers per minute

# CHESSCON SHIFT PREVIEW AGAINST CHESSCON VIRTUAL TERMINAL EMULATION

YOU CAN DO THE SAME  
WITH OUR VIRTUAL TERMINAL EMULATION

## VIRTUAL TERMINAL EMULATION

- Same results as in real world
- It takes time to prepare an emulation run
- It takes time to run emulation (max. 5 times faster than real time)
- approx. 4 hours for one shift ☹️

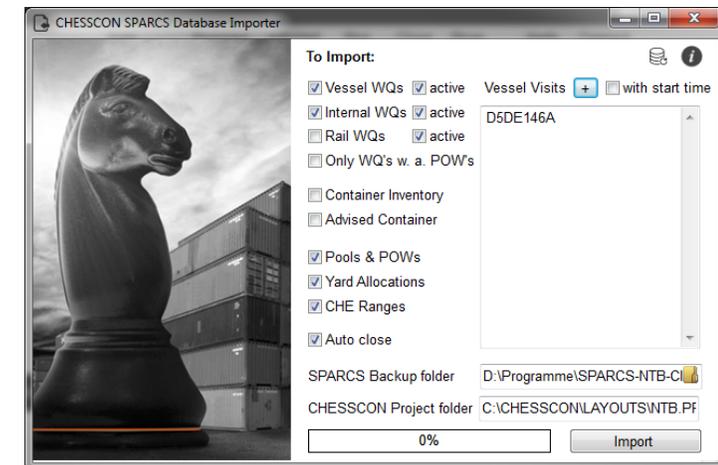
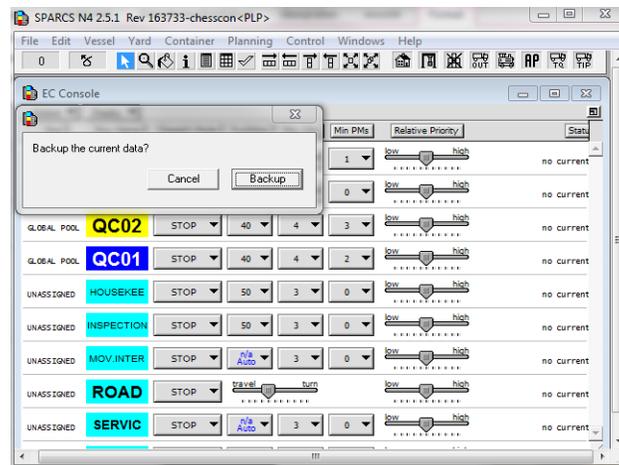
## SHIFT PREVIEW

- Nearly same results as in real world
- Runs without connection to the real TOS
- Less than 5 minutes for one shift 😊



# CHESSCON SHIFT PREVIEW TECHNICAL STRUCTURE

- Event-based simulation is required to allow high-speed calculation
- Real TOS does not allow event-based simulation
- We are using a self developed “light TOS” which allows event-based simulation
- Shift information are imported from real TOS into the “light TOS”



# CHESSCON SHIFT PREVIEW



The screenshot shows the EC Console software interface. The main window displays a table with columns: Pool, Pow Name, Mode, PushRate, Max PMs, Min PMs, Relative Priority, Status, CurRate, Ahead, Avg, Target, and V. The table lists shifts from M01 to M10 and SK18 to SK25. Each row includes a color-coded 'Pow Name' and a 'Relative Priority' slider. The 'Status' column for all shifts is 'no current shift'. A sidebar on the right lists shift names with corresponding colored icons and 'Man' labels.

Pool	Pow Name	Mode	PushRate	Max PMs	Min PMs	Relative Priority	Status	CurRate	Ahead	Avg	Target	V
M01	M01	Manual	50	6	0	low-high	no current shift					
M02	M02	Manual	50	6	0	low-high	no current shift					
M03	M03	Manual	50	6	0	low-high	no current shift					
M04	M04	Manual	50	6	0	low-high	no current shift					
M05	M05	Manual	50	6	0	low-high	no current shift					
M06	M06	STOP	50	6	0	low-high	no current shift					
M07	M07	STOP	50	6	0	low-high	no current shift					
M08	M08	STOP	50	6	0	low-high	no current shift					
M09	M09	STOP	50	6	4	low-high	no current shift					
M10	M10	STOP	50	6	4	low-high	no current shift					
SK18	SK18	Manual	50	6	0	low-high	no current shift					
SK19	SK19	Manual	50	6	0	low-high	no current shift					
SK20	SK20	Manual	50	6	0	low-high	no current shift					
SK21	SK21	Manual	50	6	0	low-high	no current shift					
SK22	SK22	Manual	50	6	0	low-high	no current shift					
SK23	SK23	Manual	50	6	0	low-high	no current shift					
SK24	SK24	Manual	50	6	0	low-high	no current shift					
SK25	SK25	Manual	50	6	0	low-high	no current shift					

Annotations:

- 0 step: day to day work use the TOS to plan the next shift (points to M01)
- 1 step: shift planning finished (points to M08)
- 1 step: shift planning finished (points to SK21)

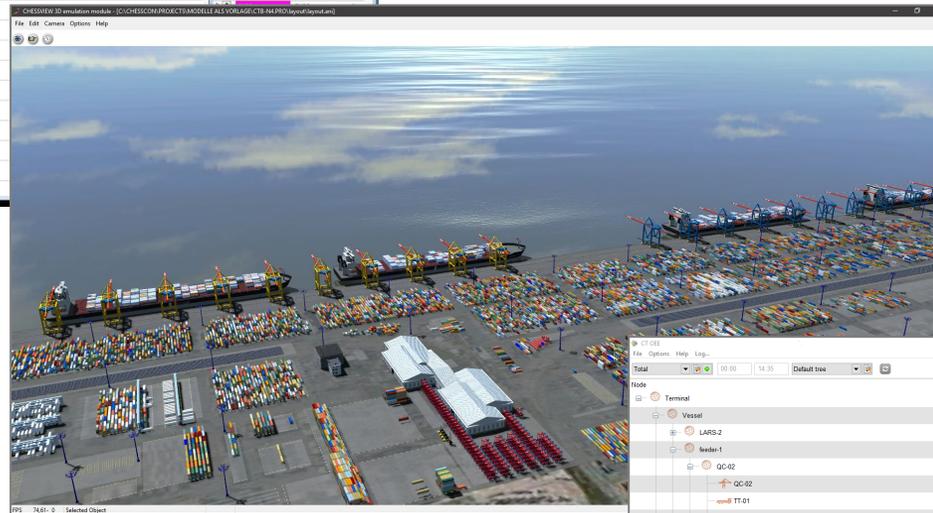
# CHESSCON SHIFT PREVIEW



IC Console

Pool	PlanName	Mode	PushRate	MaxPHs	MinPHs	Relative Priority	Status	CuRate	Ahead	Avg	Target	VesselInfo	VesselName
M01	M01	ManuA1	\$0	6	0		no current shifts						
M02	M02	ManuA1	\$0	6	0		no current shifts						
M03	M03	ManuA1	\$0	6	0		no current shifts						
M04	M04	ManuA1	\$0	6	0		no current shifts						
M05	M05	ManuA1	\$0	6	0		no current shifts						
M06	M06	STOP	\$0	6	0		no current shifts						
M07	M07	STOP	\$0	6	0		no current shifts						
M08	M08	STOP	\$0	6	0		no current shifts						
M09	M09	STOP	\$0	6	0		no current shifts						
M10	M10	STOP	\$0	6	0		no current shifts						
SK18	SK18	ManuA1	\$0	6	0		no current shifts						
SK19	SK19	ManuA1	\$0	6	0		no current shifts						
SK20	SK20	ManuA1	\$0	6	0		no current shifts						
SK21	SK21	ManuA1	\$0	6	0		no current shifts						
SK22	SK22	ManuA1	\$0	6	0		no current shifts						
SK23	SK23	ManuA1	\$0	6	0		no current shifts						
SK24	SK24	ManuA1	\$0	6	0		no current shifts						
SK25	SK25	ManuA1	\$0	6	0		no current shifts						

2nd step:  
Import planning state  
automatically



CT-CIE

Node	OEE %	U %	P %	EC	CTs	TM	TMAh	Target (Mh)	Duration	Begin	End
Total	36.1	69	63.5	46	2021	4591	314.7	496	14.35	00:00	14:35
Terminal											
Vessel	35.1	69.8	65.4	37	1636	3966	276.4	421	14.35	00:00	14:35
LARS-2	33.5	41.6	80.6	18	459	1309	146.8	181	14.12	00:00	14:12
feeder-1	39.4	45.6	86.5	17	462	1312	143.5	166	14.35	00:00	14:35
QC-02	57.8	55.7	103.8	11	425	600	103.8	108	14.35	00:00	14:35
TT-01	92.9	96.6	97.1	1	425	425	26.1	30	14.35	00:00	14:35
TT-02	43	46.3	92.8	1	90	90	6.5	7	14.25	00:00	14:26
TT-03	42.1	48.5	86.8	1	82	82	6.1	7	14.27	00:00	14:28
TT-04	41.7	47.1	88.5	1	81	81	6.2	7	14.31	00:00	14:30
TT-05	29.4	38.1	77.2	1	5	5	5.4	7	01:21	00:00	01:22
TT-06	38.8	49.2	78.7	1	75	75	5.5	7	14.33	00:00	14:34
TT-07	42.2	53.1	79.5	1	7	7	5.6	7	01:15	00:00	01:13
TT-08	45.1	58.5	77.1	1	13	13	5.4	7	02:32	00:06	02:39
TT-09	35.2	41.4	85	1	4	4	6	7	14.10	00:19	14:30
TT-10	32.3	45.1	71.5	1	63	63	5	7	13:55	00:28	14:24

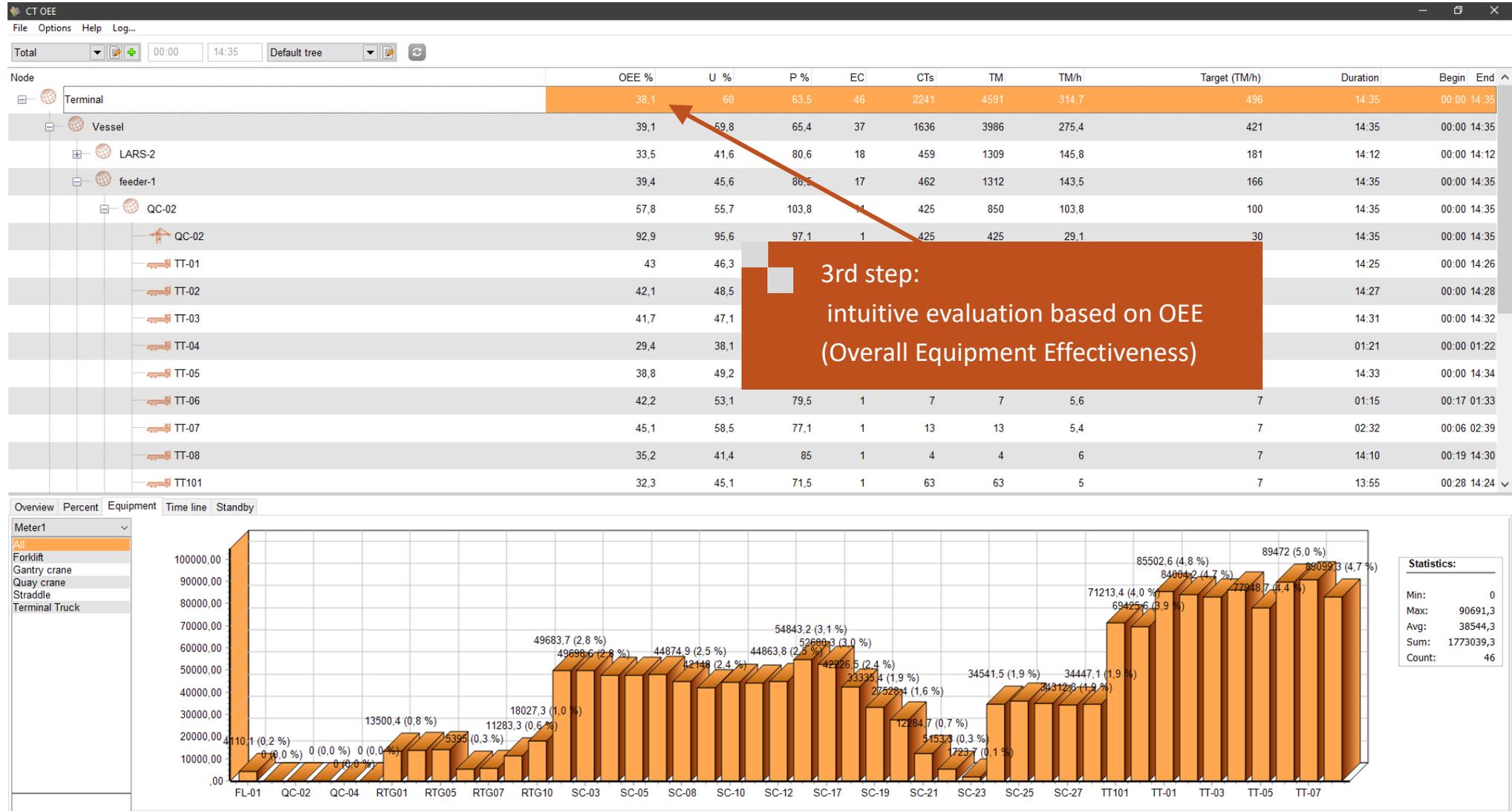
  

Equipment	Time line	Standby
Motor1		
Forklift		
Container crane		
Quay crane		
Straddle		
Terminal Truck		

Node	Value	Percentage
TT-01	1000.00	0.2%
QC-02	1000.00	0.2%
RT01	1200.00	0.3%
RT02	1822.3	0.5%
RT07	1200.00	0.3%
RT10	4061.7	1.0%
SC-01	4483.2	1.1%
SC-05	4483.2	1.1%
SC-08	4483.2	1.1%
SC-10	4483.2	1.1%
SC-12	4483.2	1.1%
SC-17	4483.2	1.1%
SC-19	4483.2	1.1%
SC-21	4483.2	1.1%
SC-23	4483.2	1.1%
SC-27	4483.2	1.1%
TT-01	8502.6	2.1%
TT-01	8947.0	2.2%
TT-05	8947.0	2.2%
TT-07	8947.0	2.2%

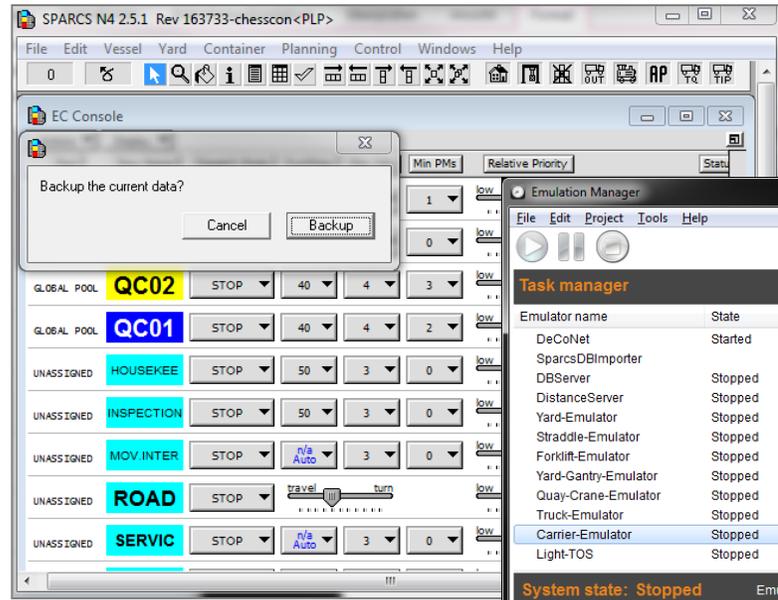
# CHESSCON INTEGRATED SUMMARY



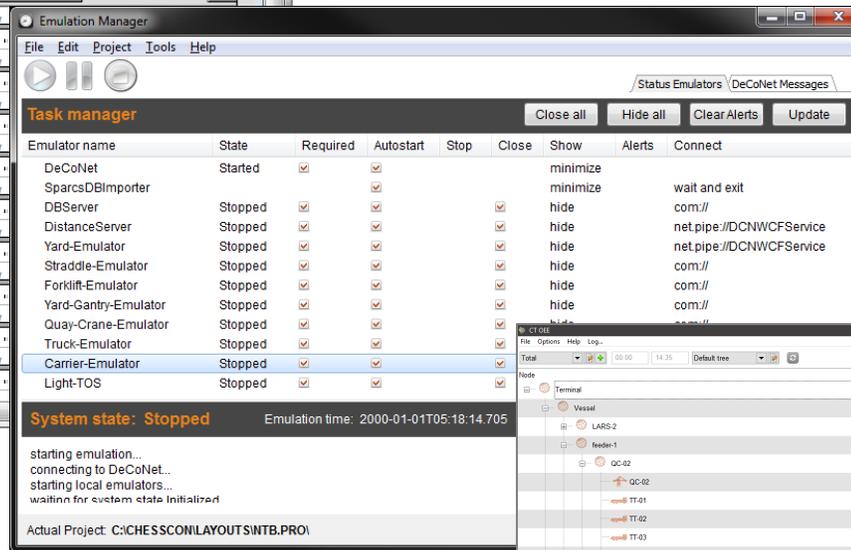
# CHESSCON SHIFT PREVIEW HOW IT WORKS



TOS



EVENT BASED  
SIMULATION

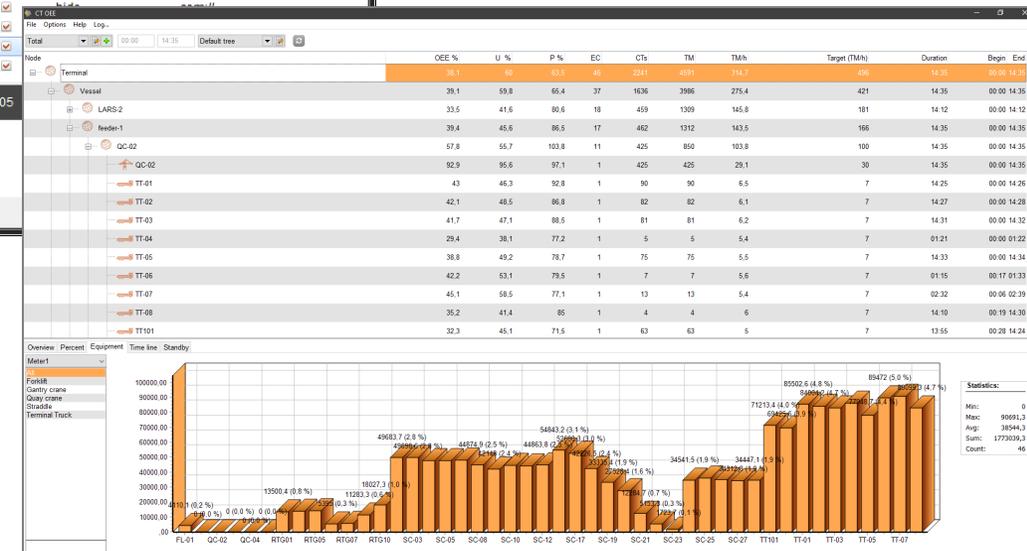


EVALUATION OVERALL  
EQUIPMENT EFFECTIVENESS

1x Vessel 5x Quay cranes 25x Straddle Carrier

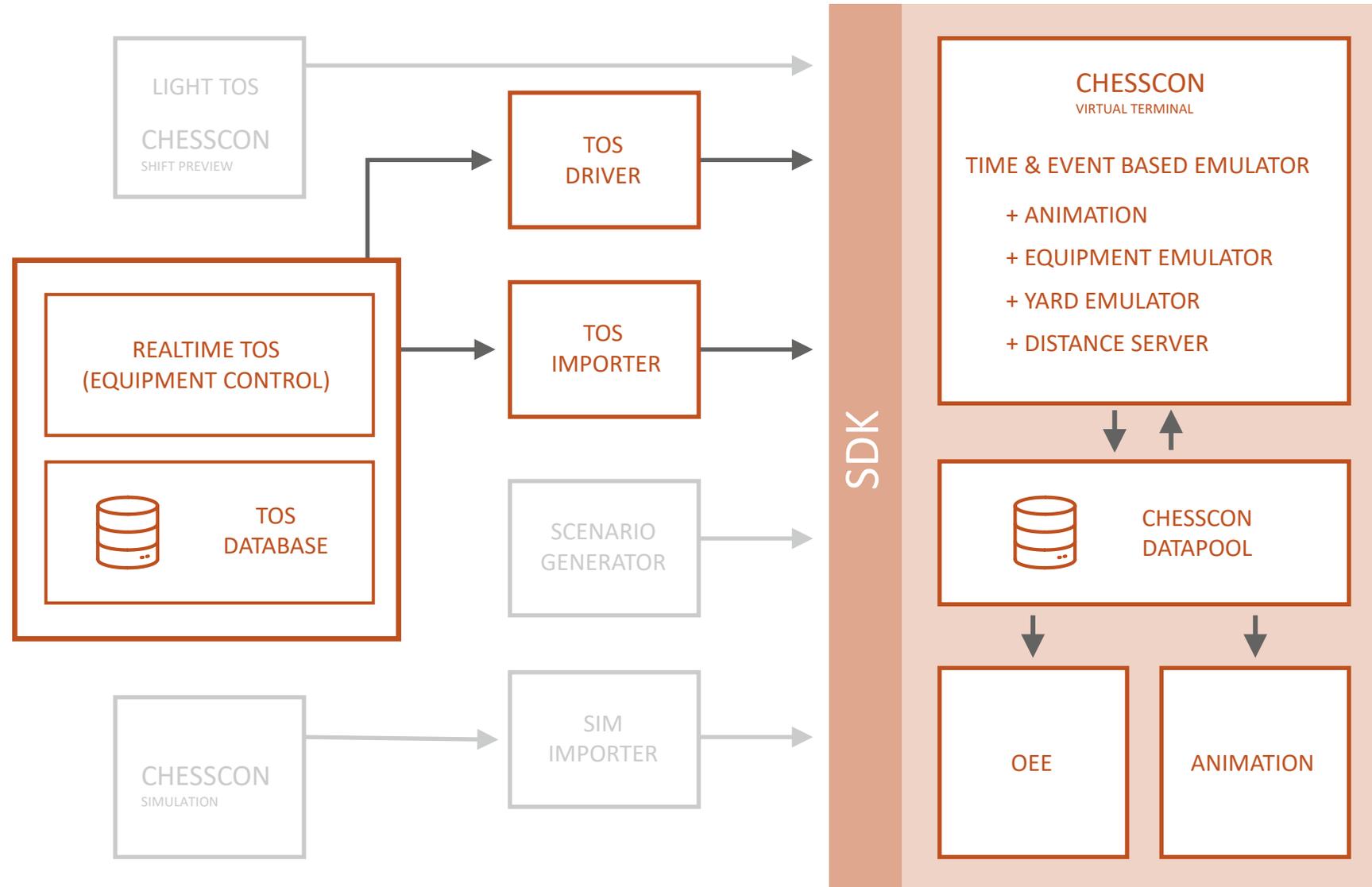
1963 CT real duration:  
Simulation duration:

**14:26 hours**  
**30 secs**



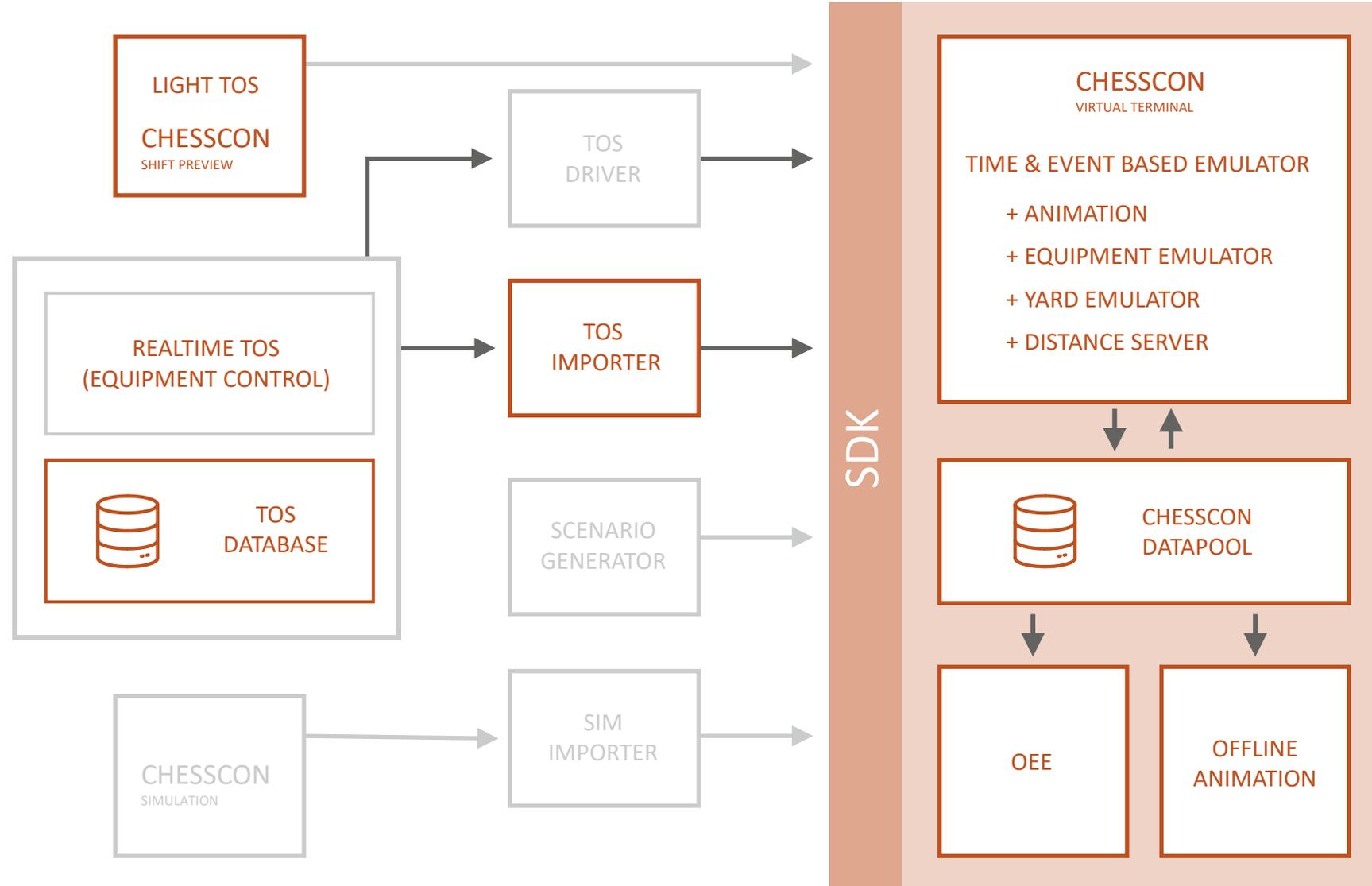
# VIRTUAL TERMINAL WITH TOS INTEGRATION

(For testing the TOS, a full N4 version has to be installed to control the virtual operation)



# SHIFT PREVIEW BASED ON TOS DATA

(For forecasting the next hours of operation, the current planning state is imported from TOS via “backup” – afterwards the simulation runs off-line)



akquinet



akquinet port consulting GmbH  
Barkhausenstrasse 2  
27568 Bremerhaven  
Germany

Phone: +49 40 8 81 73-0  
Fax: +49 40 8 81 73-111  
info@akquinet.de  
www.chesscon.com