



TIC4.0 at Transport Event

Black & Caspian Sea 2023 Port & Shipping

How Common Standards Can Benefit Your Investment and Make it More Future Proof?

Norbert Klettner, Managing Director RBS EMEA and Vice-President TIC4.0

vp@tic40.or & norbert.Klettner@rbs-emea.com

Norbert Klettner



- MD of RBS EMEA office since 2009
- ~20 years in the terminal industry
- Experience in the industry
 - Terminal Operator: Eurogate 2003 to 2008 operations, IT and TOS solutions
 - Started RBS EMEA Office in 2009 since then implementing TOPS TOS solution globally
 - From 2008 lead of the port and terminal optimization team at AKQUINET with CHESSCON tool set
- Founding member of TIC4.0 and Vice-President of **“Terminal Industry Committee 4.0 (TIC 4.0)”** association since 2019 – www.tic40.org



Agenda

- Who is TIC4.0?
- What is the TIC4.0 standard?
- How can standards benefit your investment approach?



Who is TIC4.0?



TIC4.0 Members Globally (July 2023)



Affiliated Members





Our members:



Global full and affiliated members (July 2023)

41 full members

5 affiliated members

Strategic Partners:



Media & Event Partners:





Data Standards with TIC4.0

What are the TIC4.0 standards?

The mission of TIC 4.0 is to promote, define and adopt standards that will enable cargo handling industry to embrace the 4th industrial revolution.

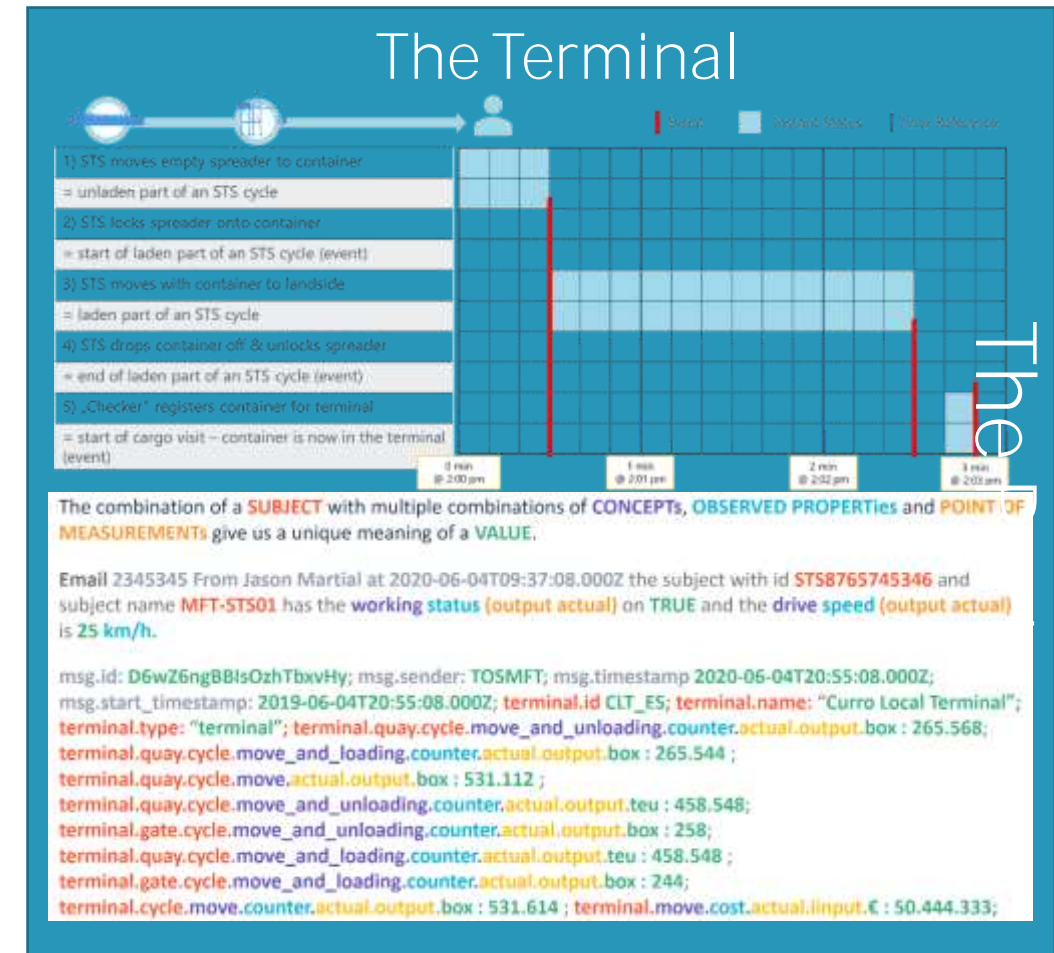
What does TIC4.0 standard focus on?

- Our focus are the processes of a terminal and their execution
 - From “carrier” and “cargo” (planned) arrival
 - To “carrier” and “cargo” (planned) departure
 - From planning to execution (equipment)
- Everything in-between for handling the carrier and cargo is part of the data model and can be expressed in a digital language



TIC4.0 to express the reality in digital language

- Defining the language to exchange data and express any reality in a digital way
- Defining the meaning of the data and its structure
- TIC4.0 data addresses both layers:
 - Execution / Equipment (CHE)
 - Planning / Processes (TOS & IT)
- Allowing both event and status based data exchange
- Latest release from 19th June 2023
 - TIC4.0 Release 2023.008



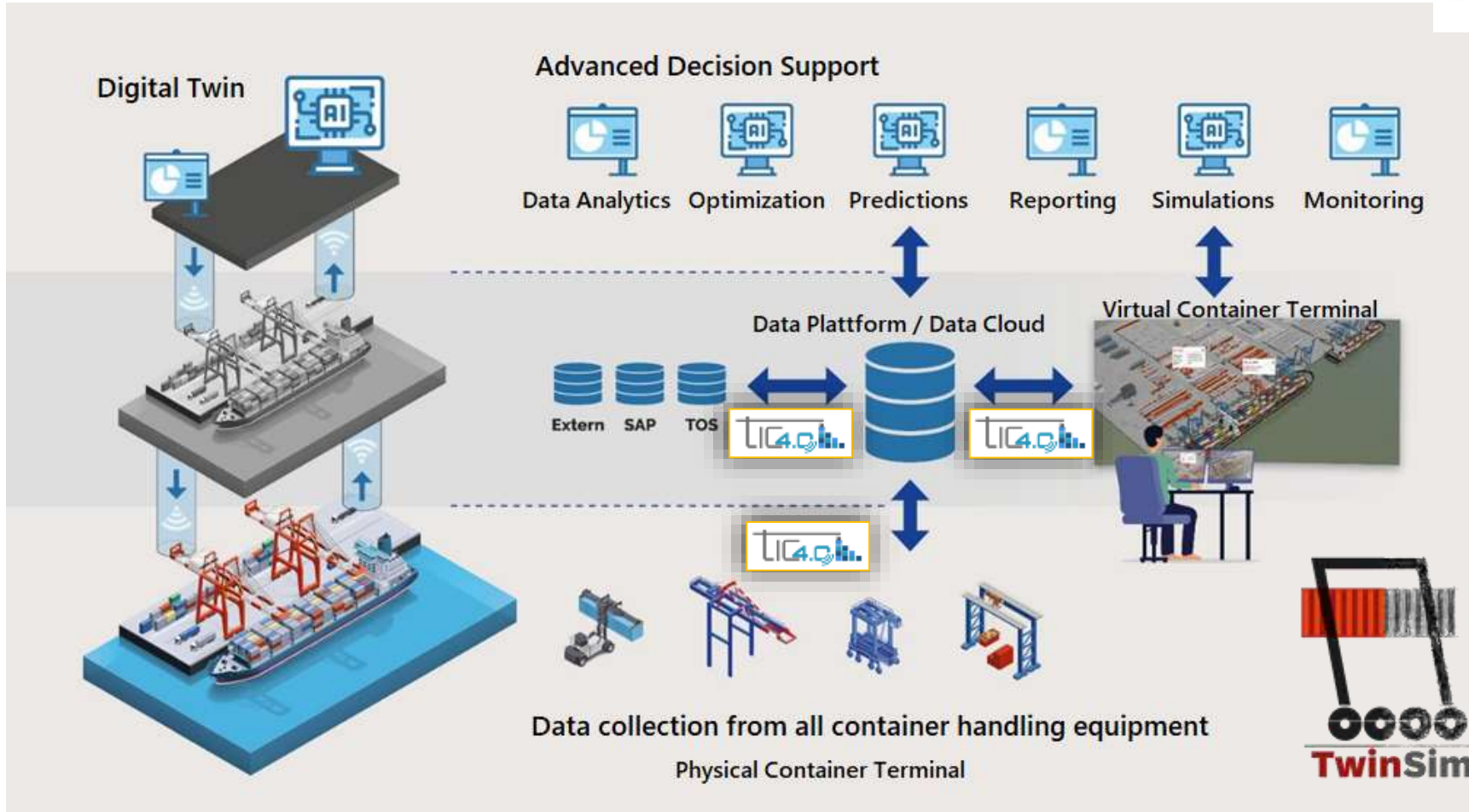


How TIC4.0 is working?

Example from a pilot project.

Example from TwinSim Project

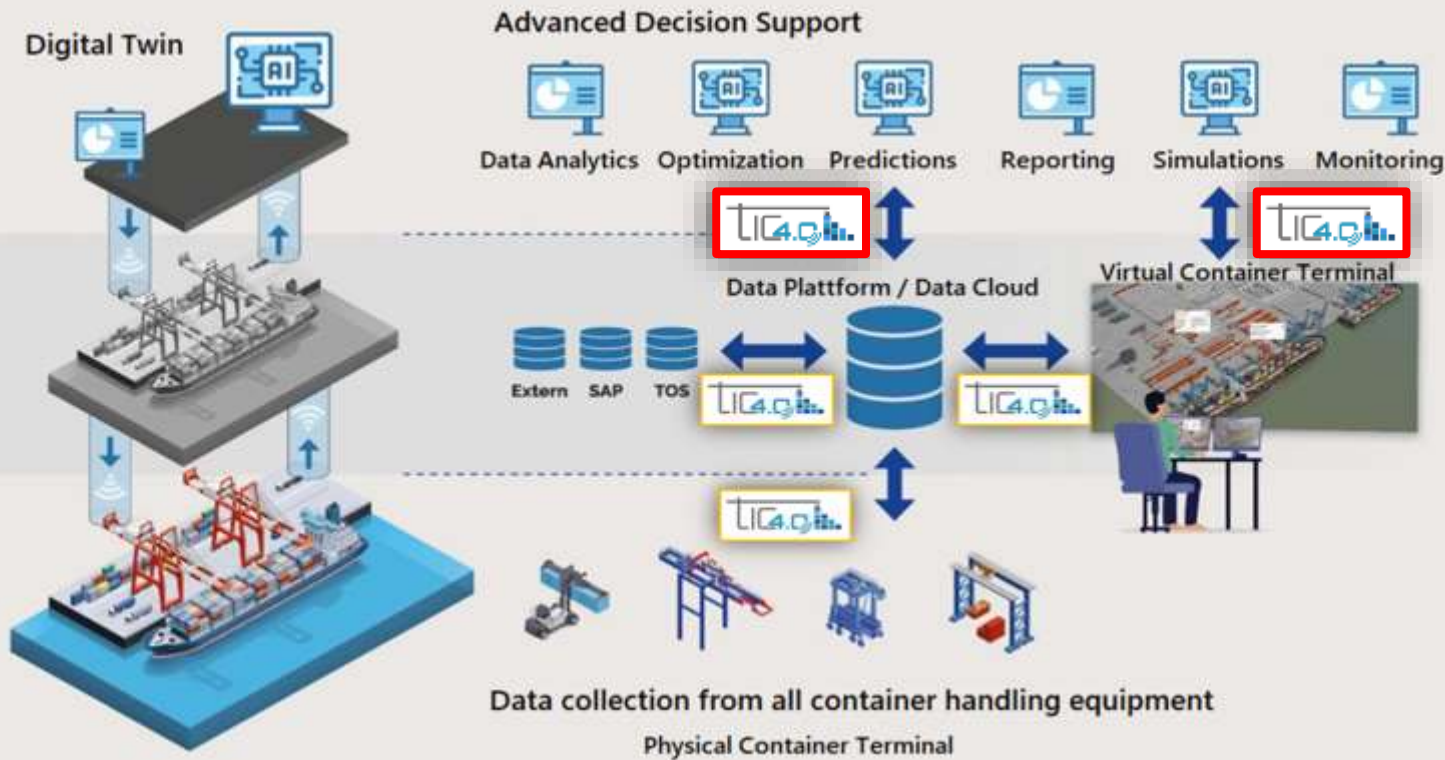
Partners:



Funded by:

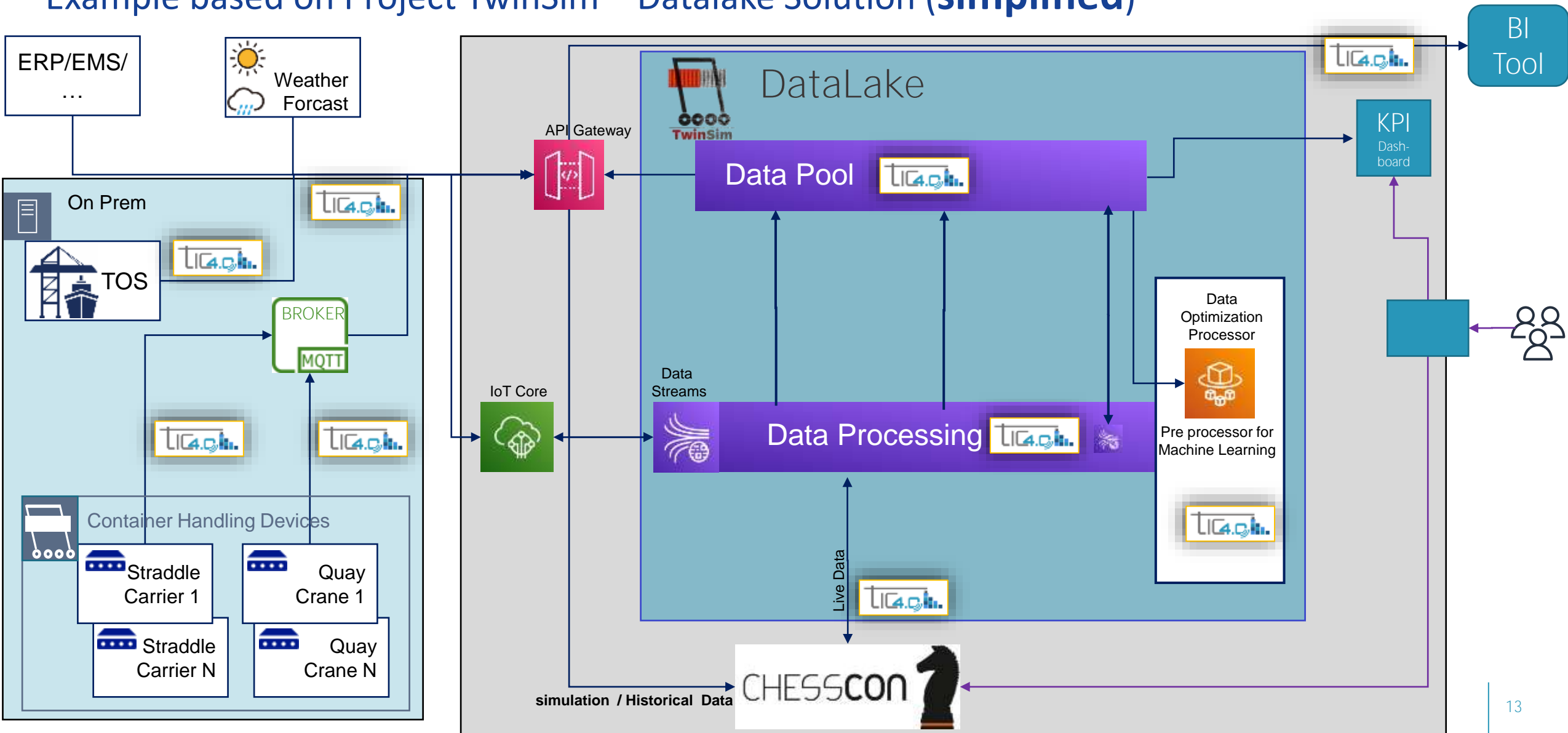


Project TwinSim: Data and Data Service Layer independence



- If your data speaks standard data language -> TIC4.0
 - What happens when you need a new service?
 - What happens when you introduce a new data source?
- Your existing architecture and components can remain unchanged!

Example based on Project TwinSim – Datalake Solution (simplified)





How TIC4.0 can support investment decisions ?

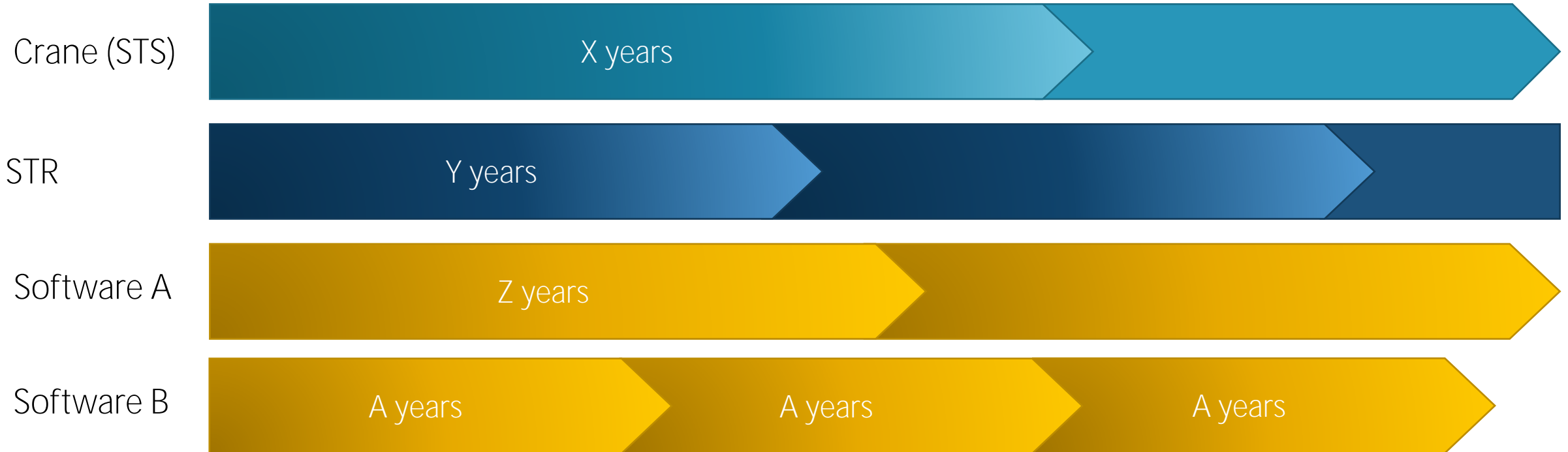
How can a data language benefit your investment decisions?

Simple view on major investments at a terminal

- Investments into
 - Processes “the planing” (IT Systems, people)
 - Execution (Equipment, people)

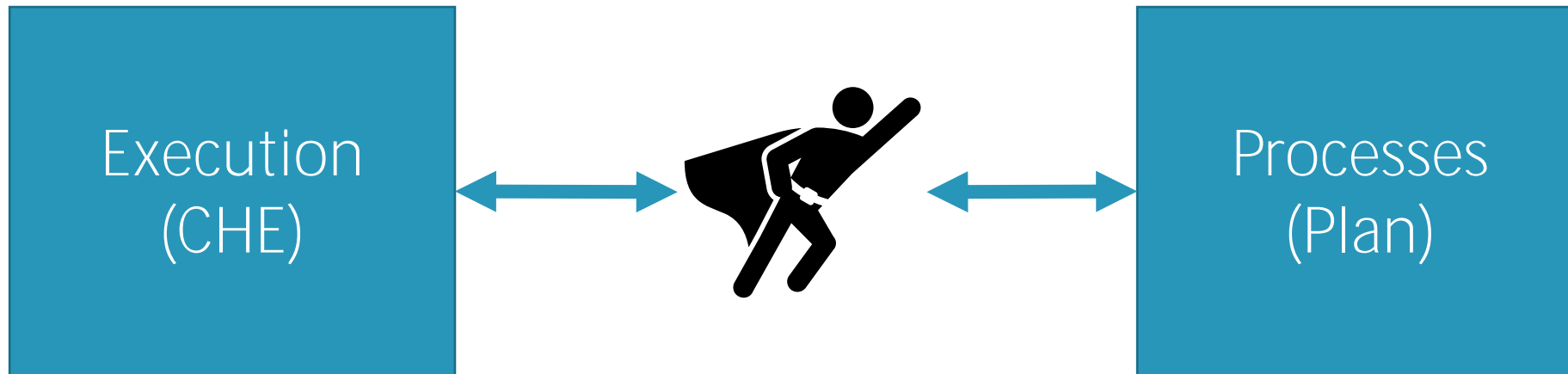
(This does not take into account buildings, civil infrastructure, etc.)

Investment timeline (simplified)



- Different investments with different re-newal timelines

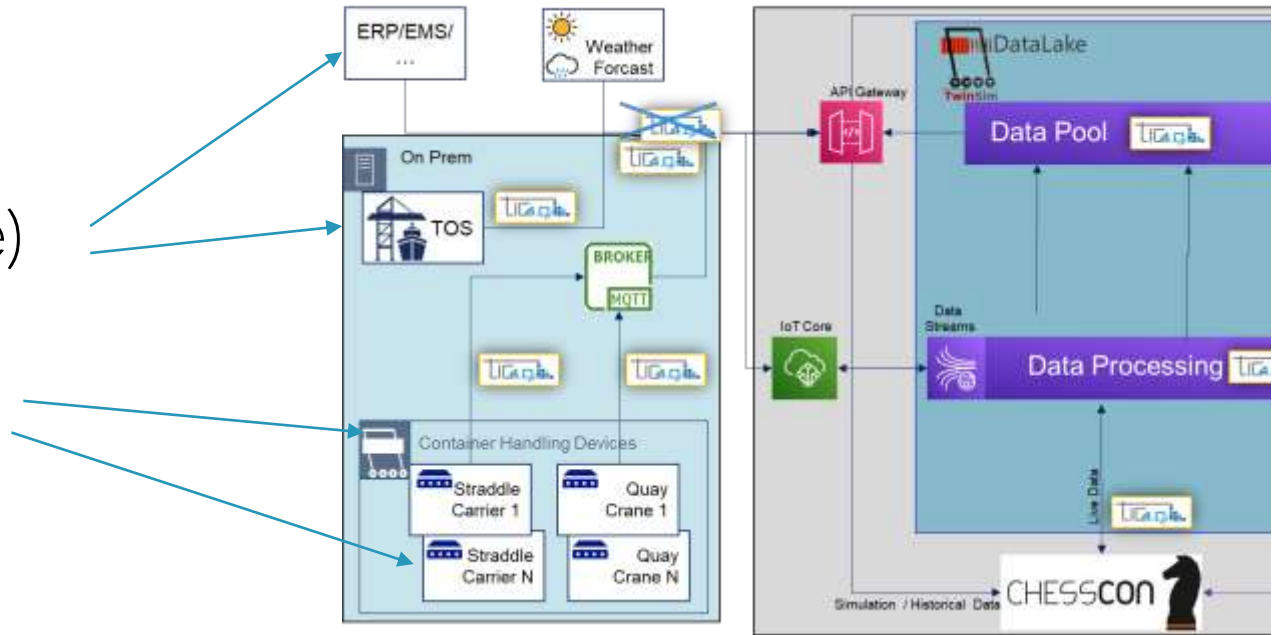
Usually the parts were some kind of separated and not connected



- The only connection between the execution (equipment) and the plan (process, software) were people (for the 9x % of terminals -> manual terminals)

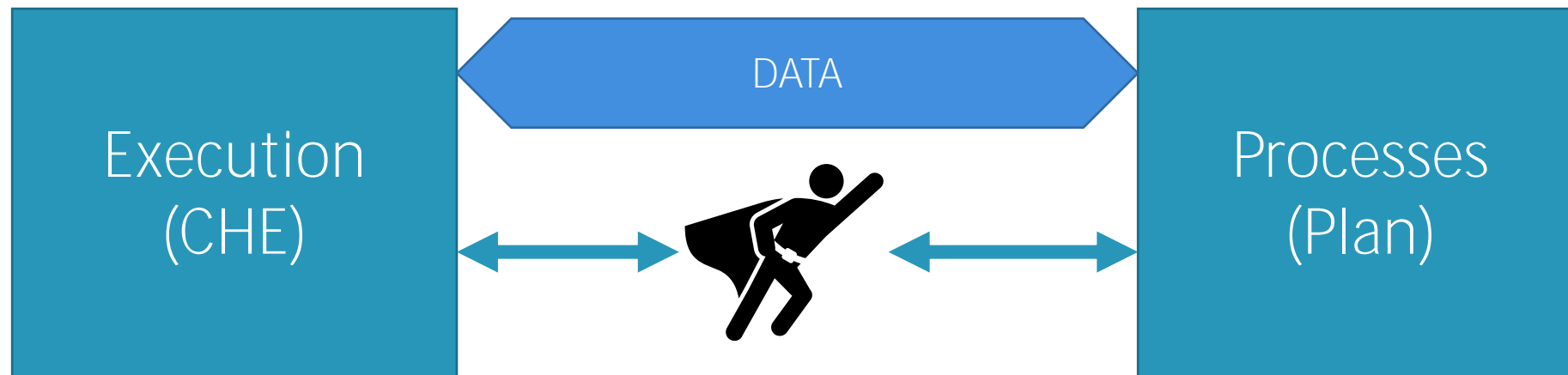
Simple view on major investments at a terminal – What changed meanwhile?

- Investments into
 - Processes (IT Systems, people)
 - Execution (Equipment/CHE)



- This has been the case already for decades! So what changed?

Previously separated pieces will be / are connected!



- Nowadays there is an additional connection that is data driven and connects the pieces in process and execution
 - This connection will become more and more important even (especially?) on manual terminals (-> **BI data, AI, automated decision making, ...**)

This also connects the investments more! more! Options?



1. Option: Buy into a proprietary universe and stay there („Apple case“)
2. Option: Disentangle the dependencies and connections by using **global standards and have independent connected modules** (“USB-C“)

The overall setup needs to become more modular. To still keep independent investment decisions (Option 2), the modules need to be plug&play.

This requires standard integration layers! -> www.tic40.org

#We talk TIC4.0 implementations as the global data standard!





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