

LCDM (LIFE CYCLE DATA MANAGEMENT) MATTI TUIKKANEN SSG



STANDARD SOLUTIONS GROUP

SETTING NEW STANDARDS / [SSG.SE](https://ssg.se)

A high-angle photograph of an industrial facility, likely a refinery or chemical plant, during a dramatic sunset. In the foreground, a large, dark, curved industrial pipe dominates the right side, surrounded by metal walkways and railings. Several orange safety lights are visible on the structure. In the background, multiple tall smokestacks rise from a complex of industrial buildings, with plumes of white smoke or steam being emitted. The sun is low on the horizon, creating a bright, golden glow that filters through the clouds, casting long shadows and illuminating the scene with a warm, orange light. The sky is filled with textured, dark clouds. The overall composition conveys a sense of industrial scale and environmental impact.

**SETTING NEW
STANDARDS.**

WE COORDINATE INDUSTRIAL COMPETENCE TO SOLVE SHARED PROBLEMS

The basis of our business is the creation of joint, standardised solutions that make industry more efficient and that everyone benefits from using. In our world, standards are very special.

Standardisation is an important precondition for development and has been throughout industrial history.



STANDARD SOLUTIONS GROUP

SETTING NEW STANDARDS / [SSG.SE](https://www.ssg.se)

SSG STANDARD SOLUTIONS GROUP

Head office **SUNDSVALL** / *Net sales* **99MSEK**

500

Industrial experts

60

Working groups

10

Committees

SCA | STORA ENSO | HOLMEN | BILLERUDKORSNÄS | SÖDRA | METSÄ BOARD

Joint owners



STANDARD SOLUTIONS GROUP

SETTING NEW STANDARDS / [SSG.SE](https://ssg.se)

OUR COMMITTEES

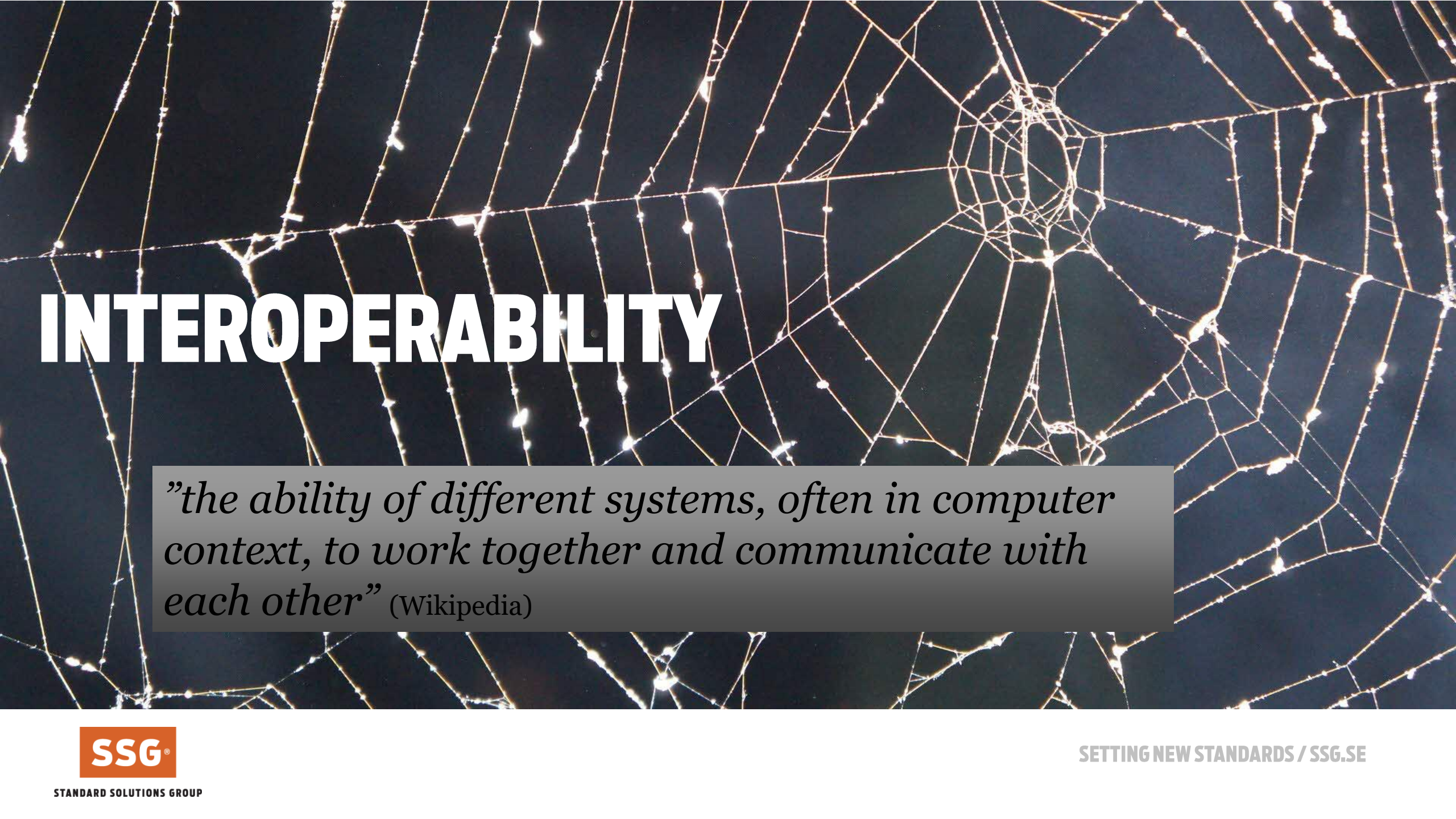
SAFETY | CONSTRUCTION | MECHANICAL ENGINEERING | PIPE ENGINEERING | ELECTRICAL ENGINEERING | SURFACE TREATMENT

INSTRUMENT ENGINEERING | PRODUCT DATABASE | DELIVERY CONTRACT | OCCUPATIONAL SAFETY AND EFFICIENCY



The image features a perspective view of a tunnel formed by curved lines of binary code (0s and 1s) in a vibrant blue color. The lines converge towards a bright, glowing light at the far end of the tunnel, creating a sense of depth and digital flow. Centered within this digital corridor is the word "DIGITIZATION" in a bold, black, sans-serif typeface.

DIGITIZATION

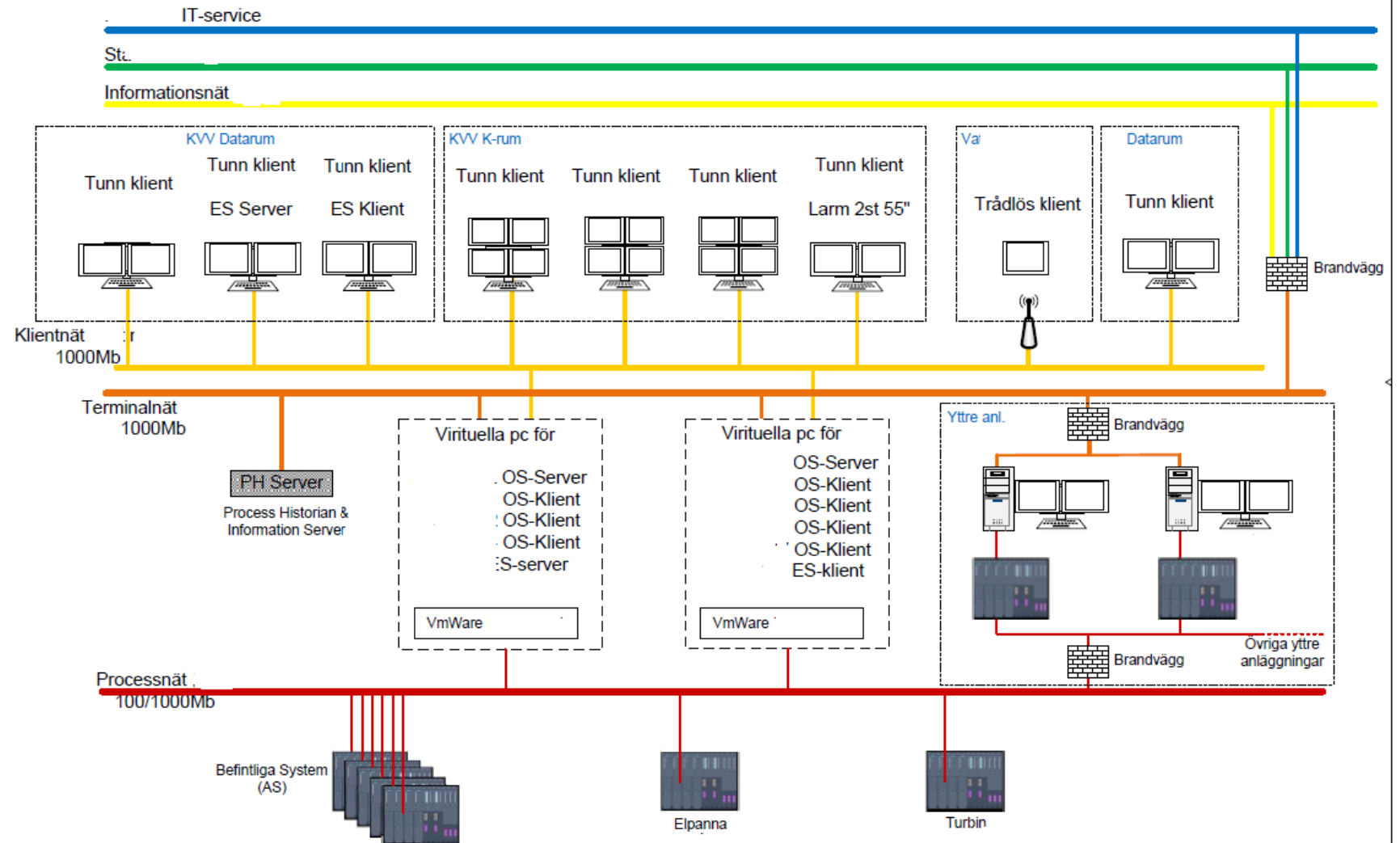


INTEROPERABILITY

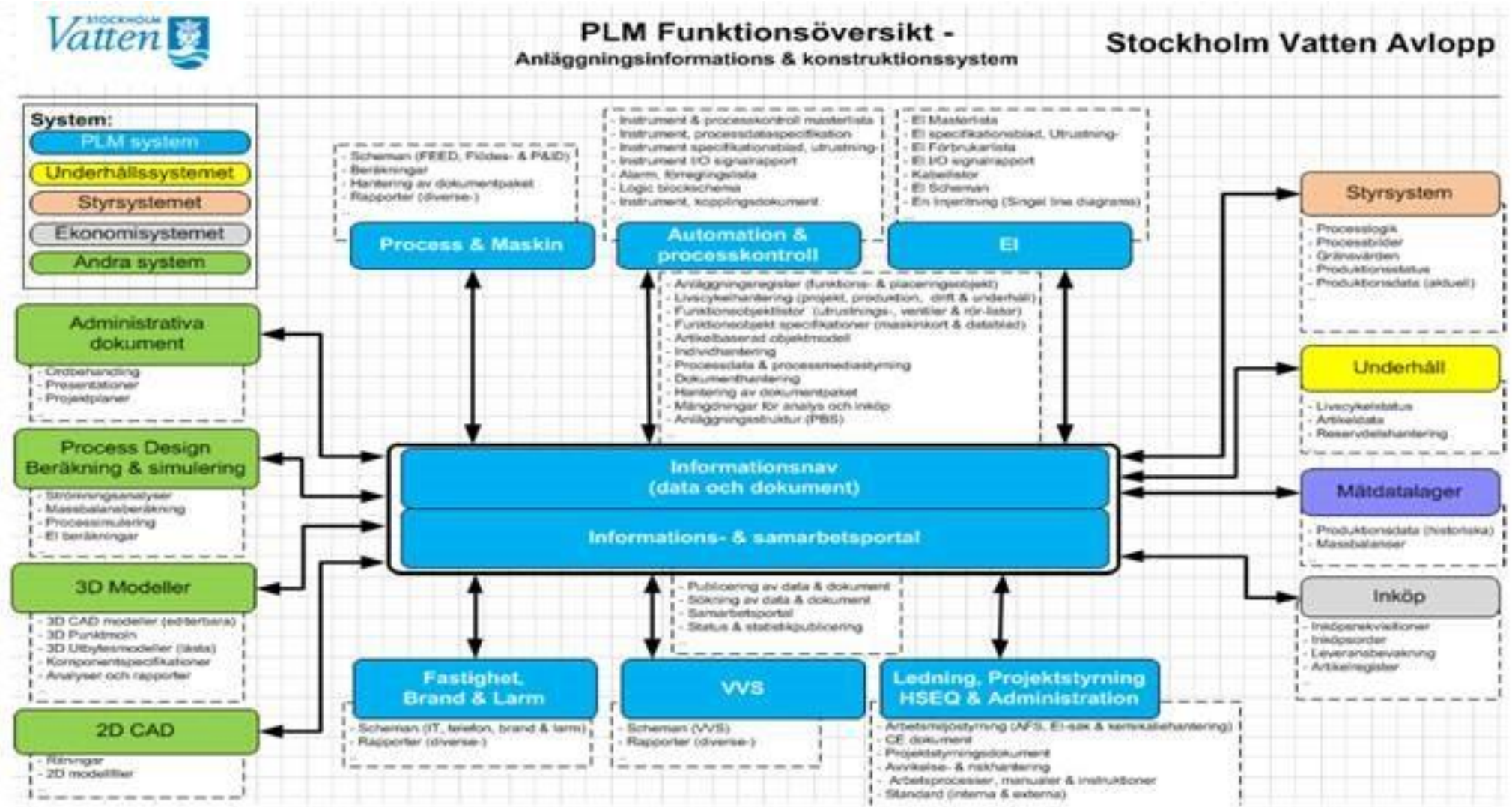
“the ability of different systems, often in computer context, to work together and communicate with each other” (Wikipedia)

COMPLEXITY AND LARGE AMOUNTS OF DATA

Systemlayout



COMPLEXITY AND LARGE AMOUNTS OF DATA



SIEMENS ADVOCATES OPEN SYSTEMS AND STANDARDS



IS THERE LIGHT IN THE TUNNEL?



ISO 15926!

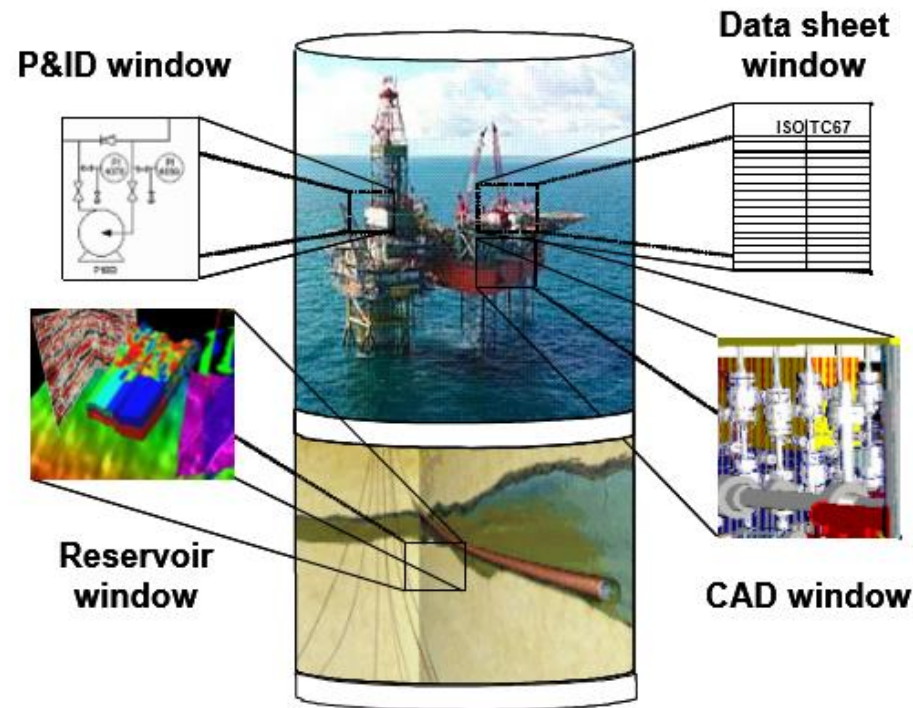


USPI-NL

Uitgebreid Samenwerkingsverband Procesindustrie-Nederland

What is ISO 15926 and what does it deliver?

ISO 15926 is a standard for *interoperability* and the *integration of lifecycle information*



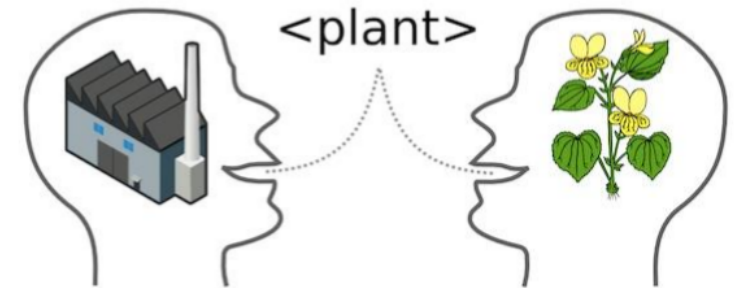
- It delivers *interoperability*
 - Between businesses & systems and *their information*
- Over *long lifecycles*
 - Technologies & business opportunities come & go
- By *minimizing ambiguity*
 - In how information is modeled, identified and represented

WHAT IS LCDM?

Phase 1. It is a project that will wake Swedish industry! We realize quite quickly that in Sweden we are far behind other parts of the world in terms of "thinking" about interoperability.

The industry challenge and AKSO's response

- Oil and gas companies are questioning the efficiency of the industry
- Aker Solutions has taken up this challenge
 - Unnumbered improvements within the company
 - Initiatives together with clients and various industry partners
- One part of our effort is looking at how data can be exploited to its full potential in order to reduce cost and time of engineering
- This presentation will elaborate on how the ISO 15926 Part 12 DL ontology is used as a basis for structuring, navigating, finding the information and support efficient reuse once found



WHAT IS LCDM?

Phase 2. A knowledge trip,
make us realize that we do
not have to reinvent the
wheel again!

Varför LCDM

- Systemutvecklingen av projektering har inte givit oss den produktivitetsförbättring man kan förvänta sig.
 - Visualiseringen har förbättrats, 3D-modeller blivit bättre och generiska format kan sätta samman hela fabriker.
 - Myndighetskrav i form av CE-märkning, SIL och PL-klassning mm är en omständighet som givit mer projekteringstid.
 - Men, för att komma fram med ett underlag för den som ska svetsa ett rör, montera en givare eller armera ett fundament har **inte den nedlagda tiden för projektering följt den utveckling vi haft de senaste 20 åren i datorer och system.**
- Varför är det nu så?
 - Projektörer och systemleverantörer har inget incitament att effektivisera.
 - Slutkunder har väldigt liten påverkan på detta.
 - Utökade myndighetskrav.
 - Verktygen är en del, men kunskaperna för hur projekteringen blir i verkligheten krävs för att få ut effektiviseringen. Otakt i generationsväxlingen med anläggnings- och systemkunskap kan vara en orsak.

WHAT IS LCDM?

Phase 3. Pilot. The project will provide a pilot on how we can benefit from the progress of the outside world. How could the handover process be more interoperable!



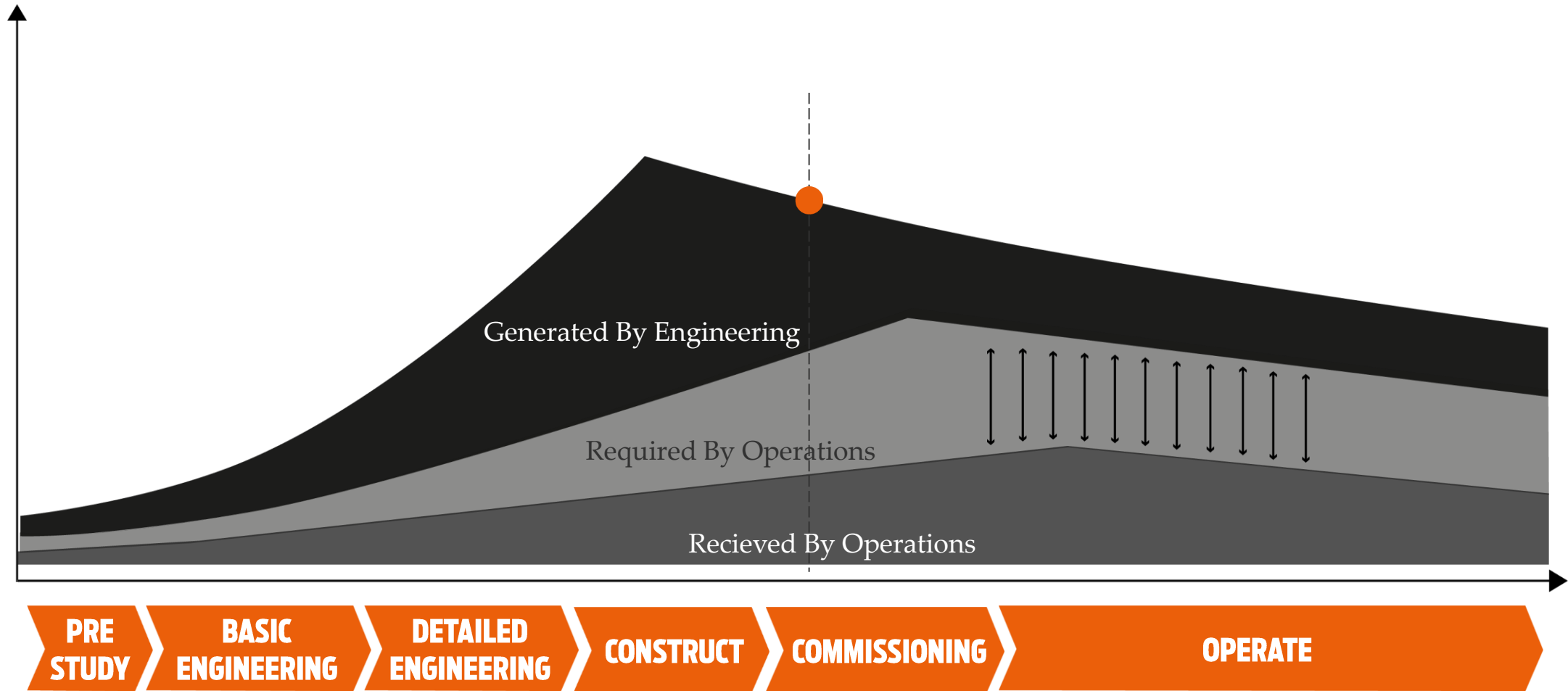
USPI-NL
Uitgebreid Samenwerkingsverband Procesindustrie-Nederland



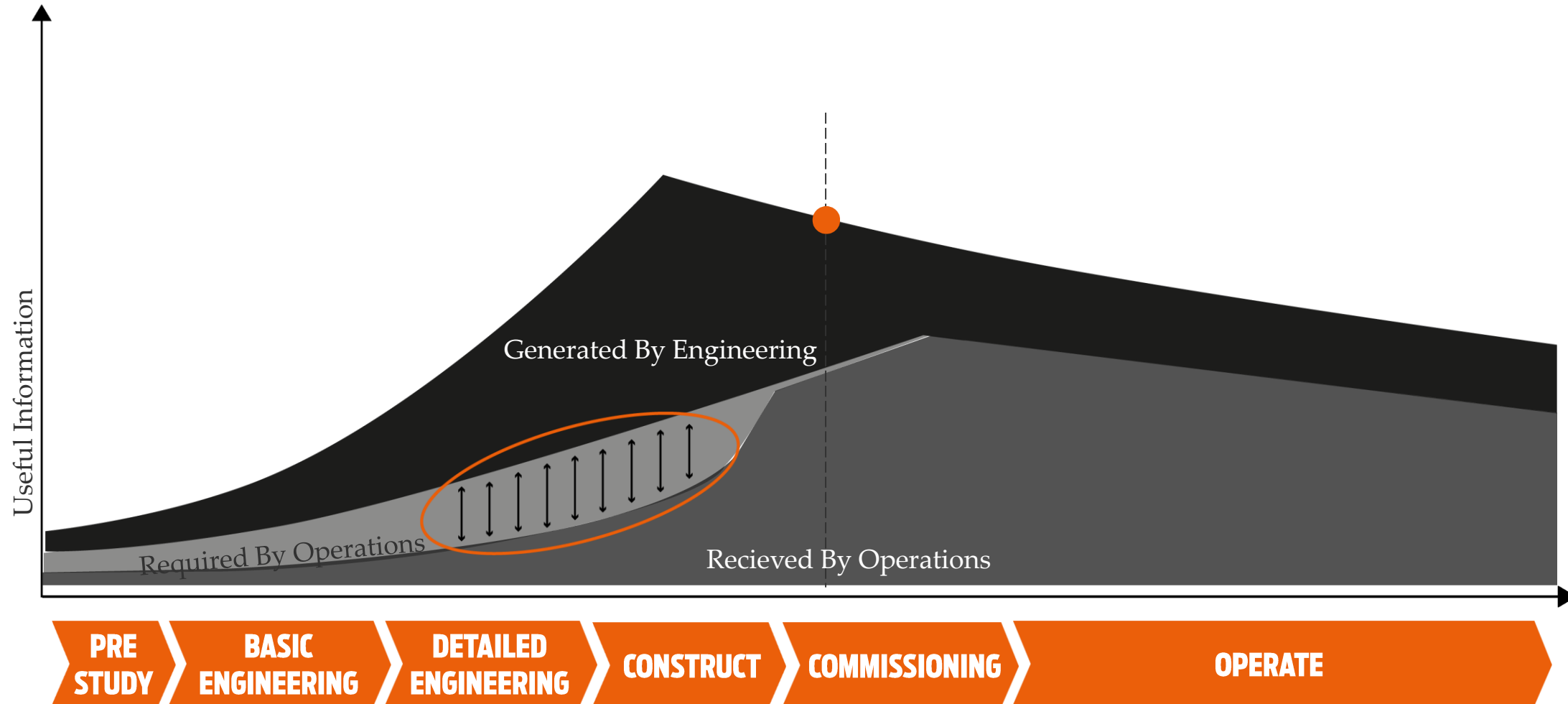
STANDARD SOLUTIONS GROUP

SETTING NEW STANDARDS / SSG.SE

TRADITIONAL HANDOVER



PROGRESSIVE HANDOVER



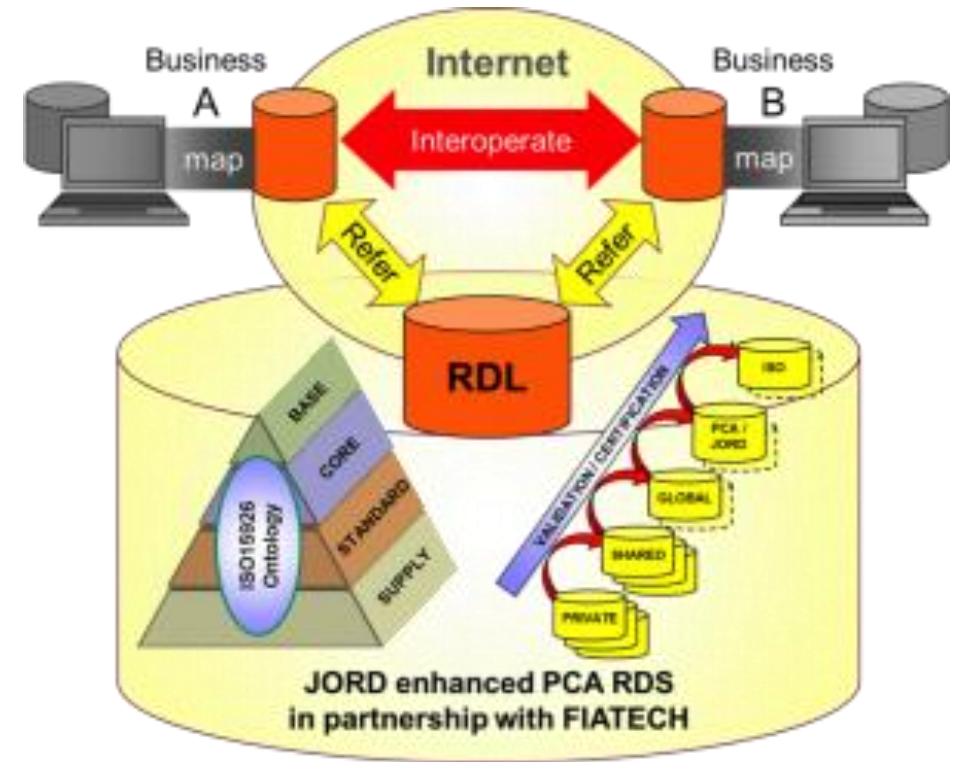
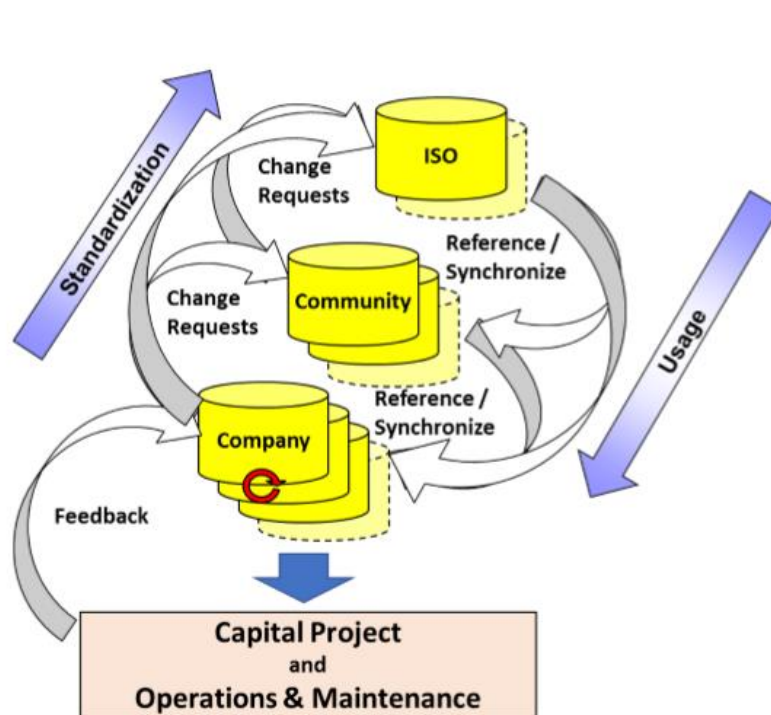
SSG®

STANDARD SOLUTIONS GROUP

SETTING NEW STANDARDS / SSG.SE

WHAT DOES THE LCDM BUILD ON

ISO 15926 A standard for interoperability based on "a general, complex data model that uses a reference database (RDL) with concepts to make it understandable"



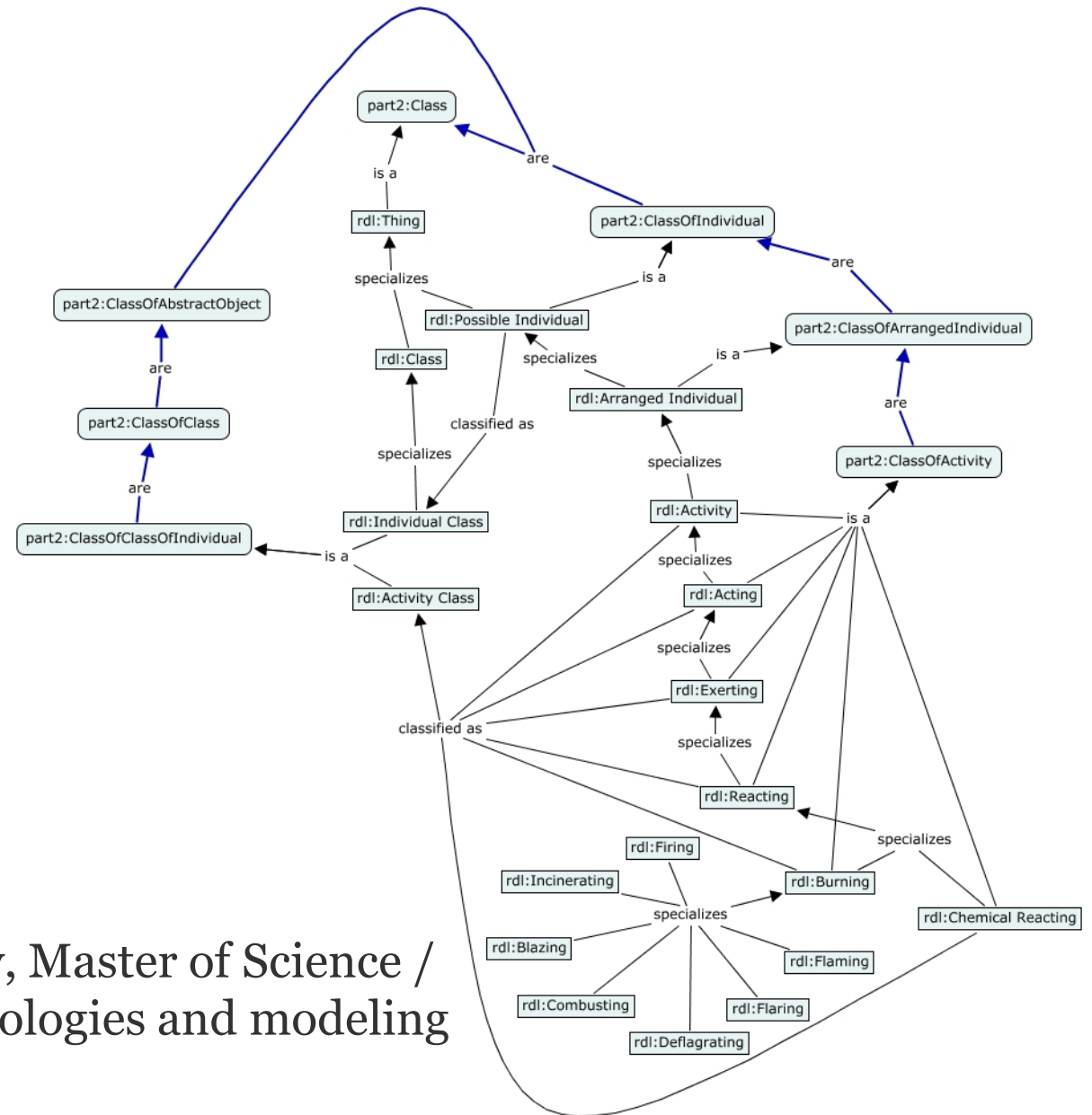
WHAT IS ISO 15926

ISO 15926 is based on the Semantic Web

- Ontologi
- Semantik
- W3C,
- Web Ontology Language (OWL)

Skills profile: (from one of the project participants)

Master of Science in Information Technology, Master of Science / Computer Science. You must understand ontologies and modeling



POTENTIAL ÖVERSÄTTTS

Bristen på interoperabilitet:

- Finns det undersökningar som visar på 2,8% besparingar av totala investeringskostnaden. Svenska skogsindustrier investerade under 2015 och 2016 i snitt 14 Miljarder och redan nu aviserar den investeringar på 12 miljarder under 2017. Med försiktig och halverad potential, och bara för skogsindustrin, skulle det kunna innebära årlig besparing på ca 170 miljoner.
- Tar man det ur ett helt industriellt perspektiv så investerade industrin 2016 totalt för 59,5 miljarder enligt SCB. Det innebär att potentialen för svensk industri ligger på ca 1,6 miljarder/år.
- Det finns andra undersökningar som beskriver kostnaden för interoperabilitet som 6,5 gånger större än vad oplanerade stopp i industrin kostar.

SSG ROLE

SSG STANDARD SOLUTIONS GROUP AB (556403-1523)
project coordinator, run the project

Project partners:

Ahlsell Sverige AB (556012-9206)
EUROCON SITEBASE AB (556544-3164)
IBM Svenska Aktiebolag (556026-6883)
IFS WORLD OPERATIONS AB 556040-6042)
SCA Graphic Sundsvall Aktiebolag (556093-6733)
STORA ENSO FORS AKTIEBOLAG (556012-8661)
ÅF-INDUSTRY AB (556224-8012)
ForsCon AB (556699-8729)
Aucotec Sweden AB (556305-9632)
Siemens Industry Software AB (556391-4018)
Plan B Services AB (556786-5034)
Hexagon PPM Danmark A/S
Zert AB (556445-1812)
ABB Control Technologies AB (556029-7029)



STANDARD SOLUTIONS GROUP



*Part of the government's strategic
cooperation program*

Project stakeholders :

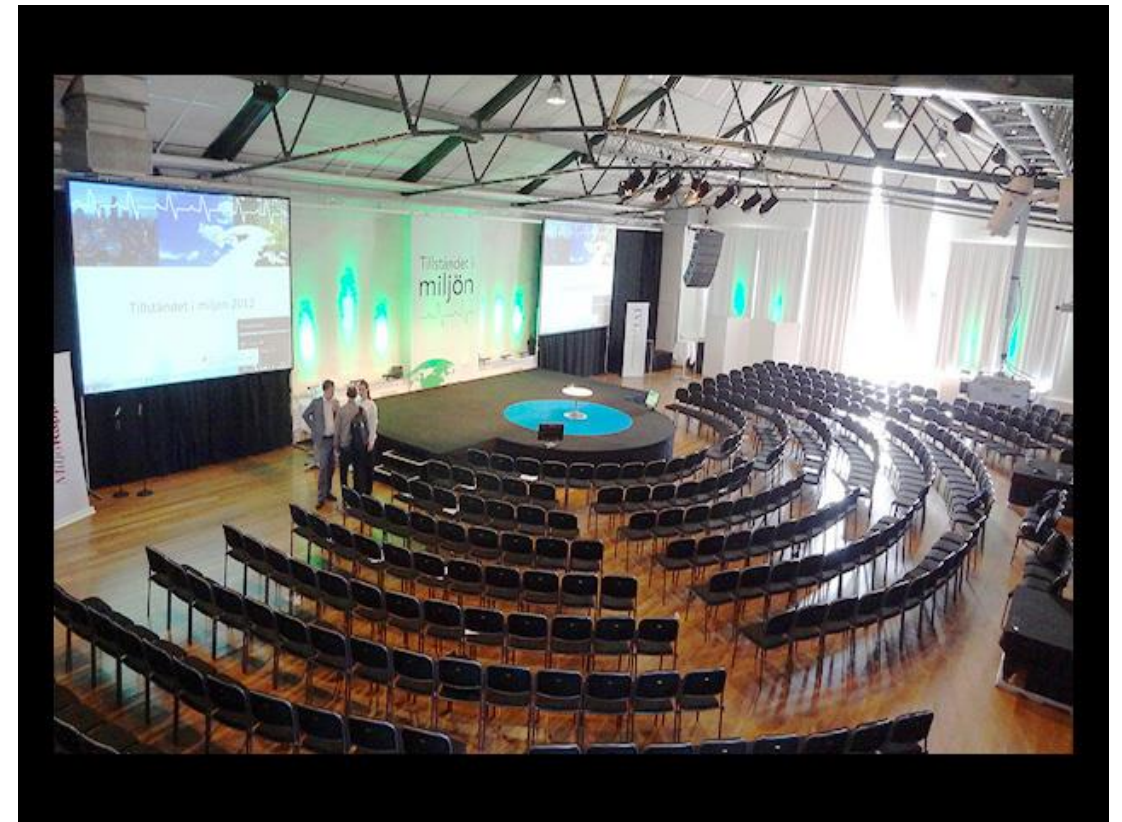
Aucotec AB, ABB, Ahlsell Sverige AB, Akzo Nobell, Astra Zeneca, Billerud Korsnäs, Boliden, Borelialis, Eurocon, Eurostep, ForsCon AB, Gryaab, Hexagon PPM Danmark A/S, IBM, IDUS, IFS, Indupipe AB, LKAB, Lunds Tekniska Universitet, PiiA, Plan B, Plant Vision, Preem, ProTak, Pöyry, ROBOET, Rottneros Vallvik, Sandviken, SCA Ortviken, Siemens, Siemens Industry Software, Sigma, SIS, SSG, Stockholm Vatten och Avfall, Stora Enso Fors Stora Enso Hylte, Stora Enso Skutskär, Sundsvall Energi, Vakin, Valmet, Volvo Trucks, Zert AB, Xcellent EAM, ÅF, Hexagon PPM Danmark A/S, Vakin, Mittsverige Vatten, Monitor, THTH ry, Andritz Finland, Iggesund Paperboard, Mälarenergi, Boliden, Stockholm Exergi AB

SETTING NEW STANDARDS / SSG.SE

WHAT IS LCDM?

Phase 4. Conference in spring 2019. A major national conference where we present the project and the result of the pilot for Swedish industry.

The goal of attracting more than 200 visitors, (110 followers today).



STANDARD SOLUTIONS GROUP

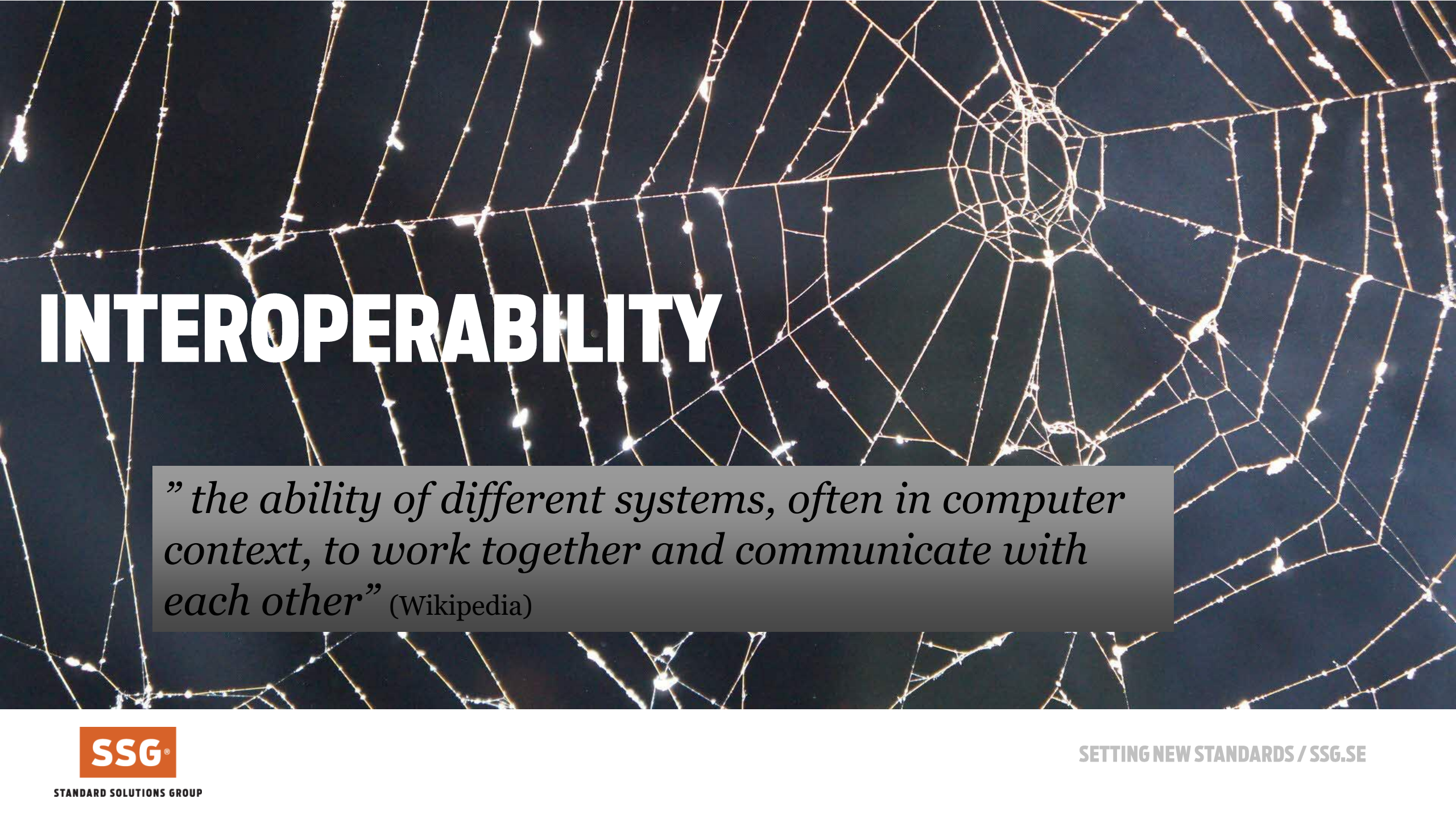
SETTING NEW STANDARDS / SSG.SE

” The LCDM project, which make document management smart, is part of the new, smart and digitized industry. These are thoughts that have been around for a long time, but have not been completed before. There is a great potential in this project.”

Örjan Larsson, Blue Institute (previus CEO på ABB Sweden and Mercuri Urval bl.a.)

blue institute





INTEROPERABILITY

”the ability of different systems, often in computer context, to work together and communicate with each other” (Wikipedia)

THANKS!



STANDARD SOLUTIONS GROUP