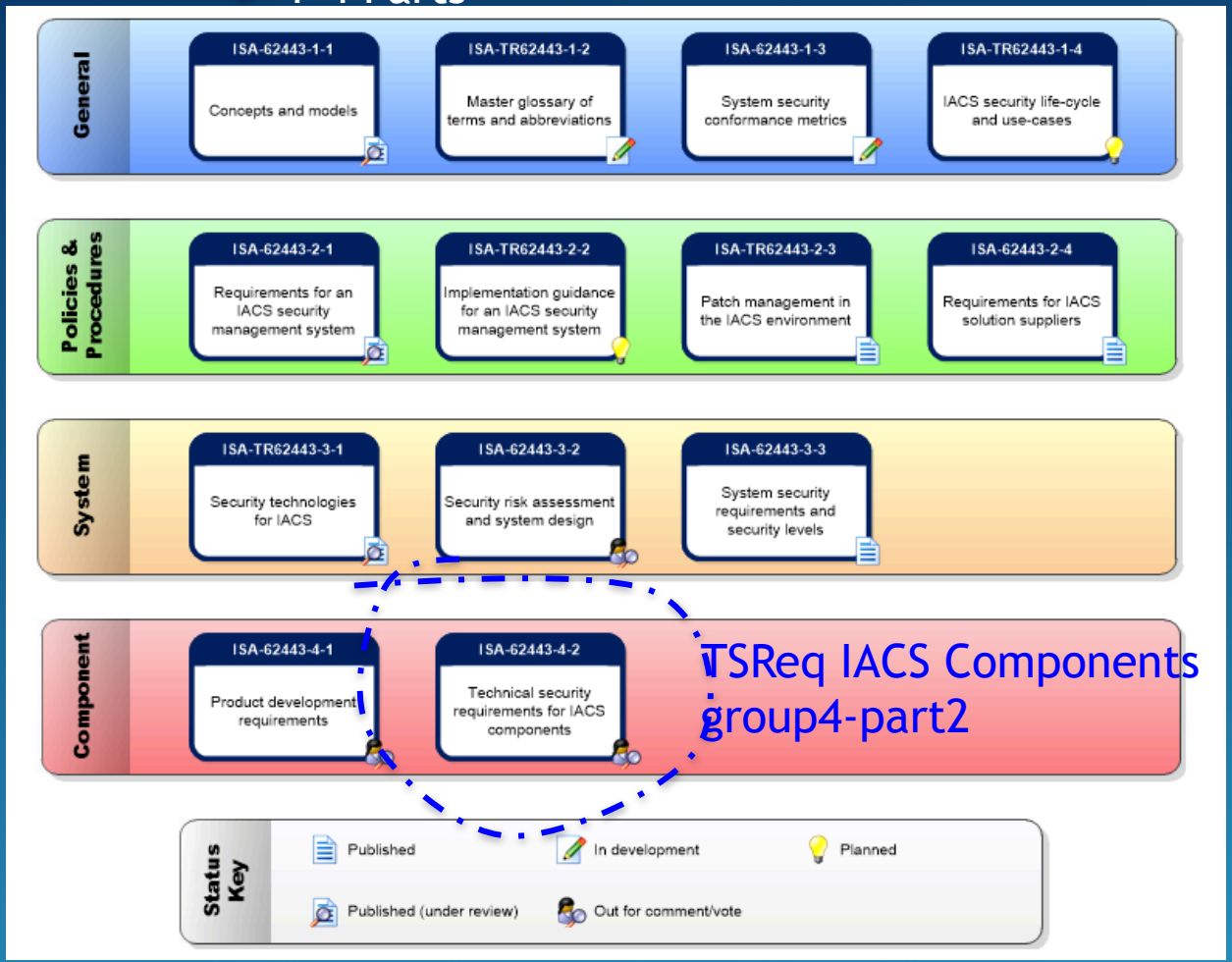
BACK TO THE PRESENCE

‚IACS Operation & Automation & Autonomy Interoperability‘ (SSI) —>

1-4 Parts

1-4 Groups



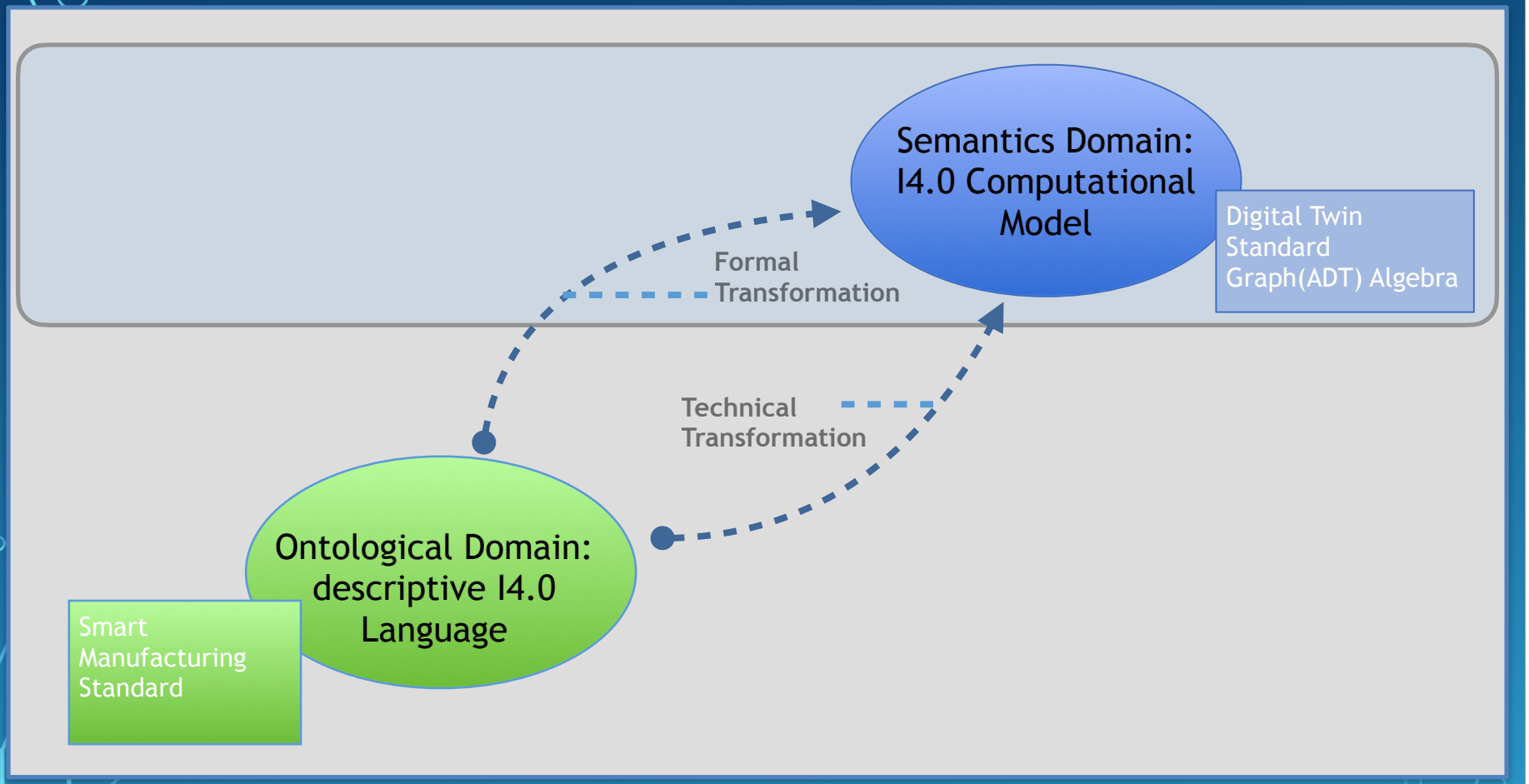
IEC 62443 multi-part IS on ‚Industrial Automation and Control Systems (IACS)‘

SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')

Approach of Semiotic Triangle —> I4.0 Isomorphy of Formal/Technical Transformations

Starting Point:= Descriptive Ontological Stanards (e.g. TC57 / TC65)

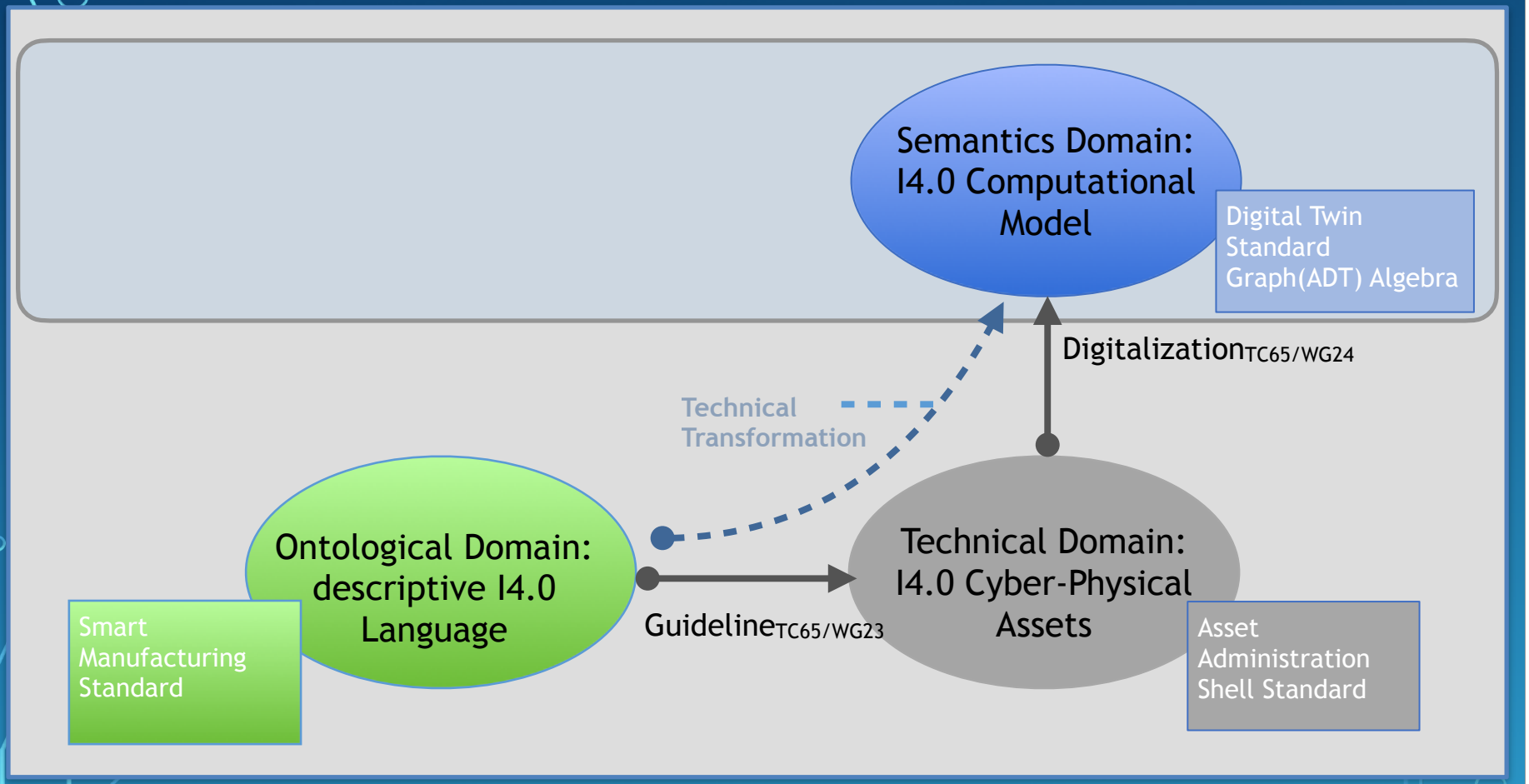
End Point:= Computational Semantic Standards



SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')

Approach of Semiotic Triangle —> I4.0 Isomorphy of Formal/Technical Transformations

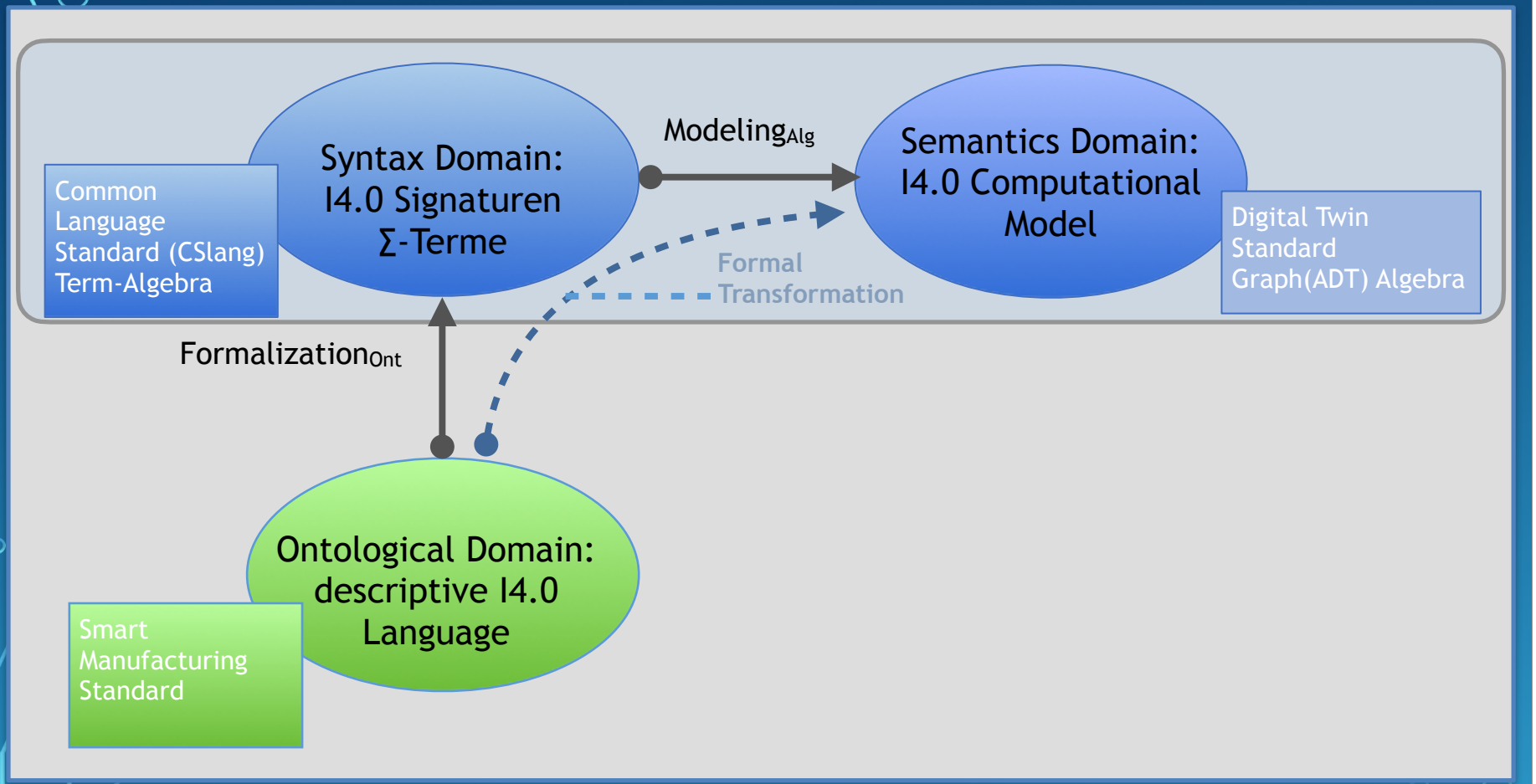
Technical Implementation Path:= (Digitalization o Guidelines)



SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')

Approach of Semiotic Triangle —> I4.0 Isomorphy of Formal/Technical Transformations

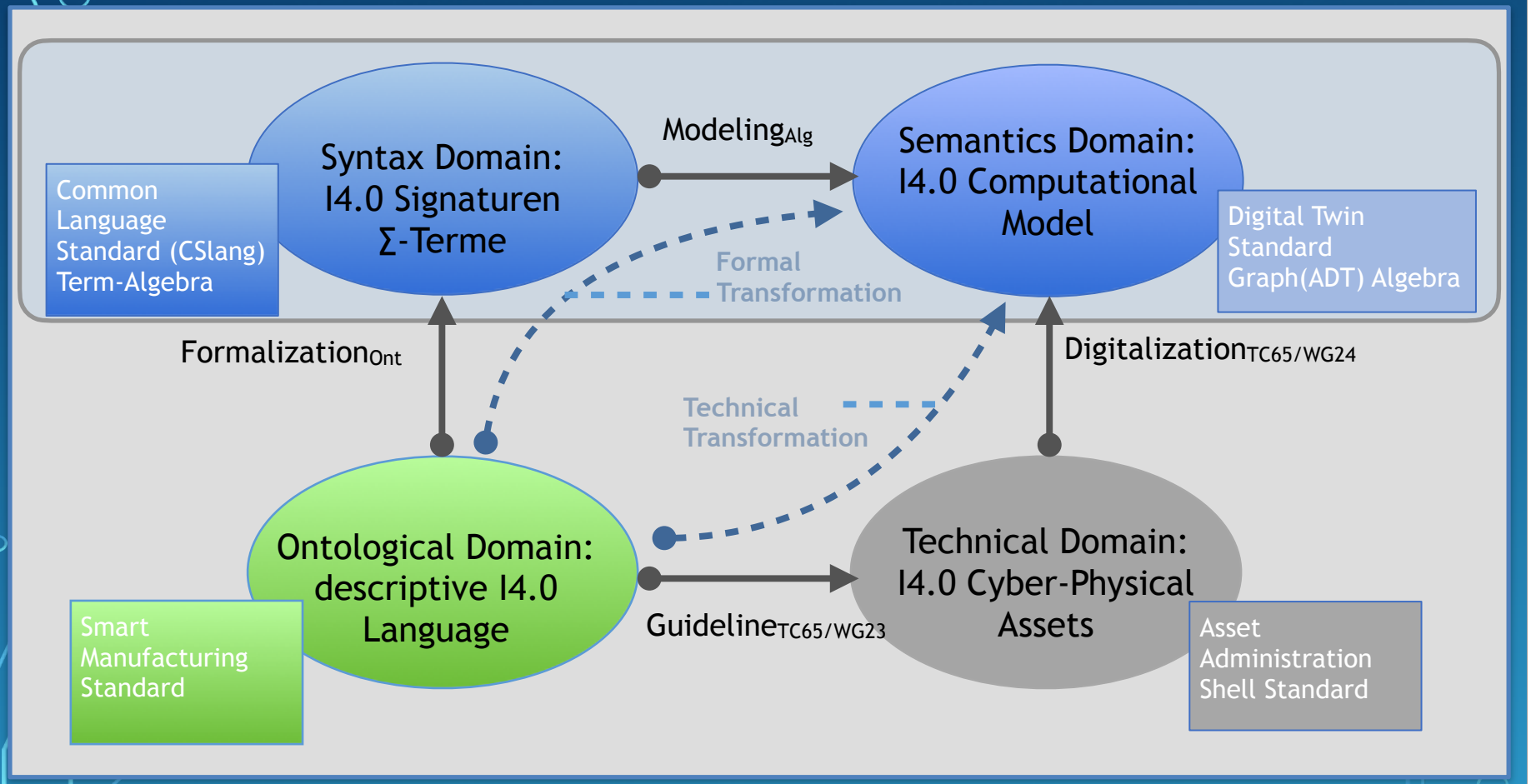
Formal Description Path:= (Modeling o Formalization)



SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')

Approach of Semiotic Triangle —> I4.0 Isomorphy of Formal/Technical Transformations

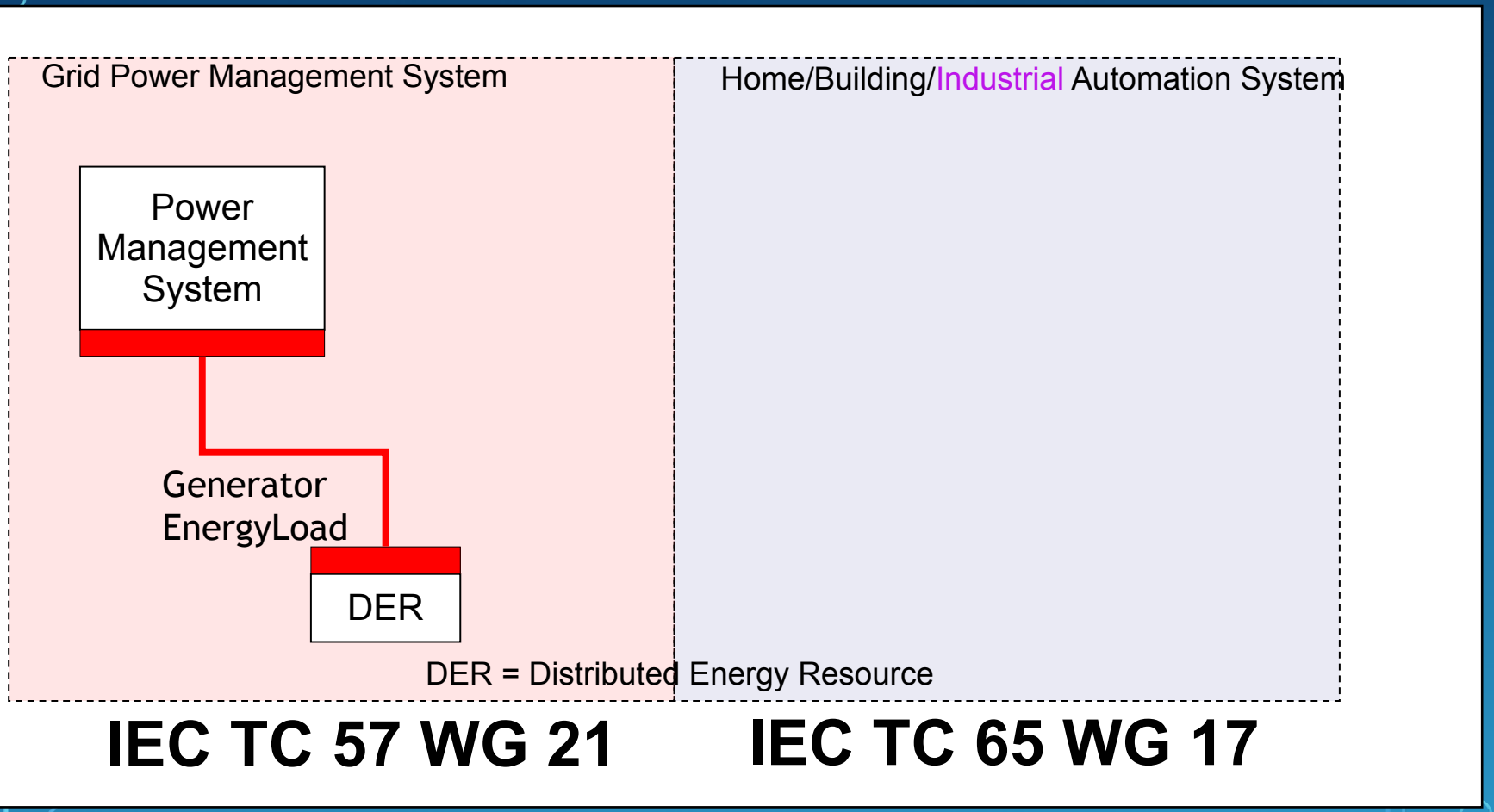
Correctness Criteria:= (Modeling o Formalization) == (Digitalization o Guidelines)



SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')
[Source: Roland Heidel, TC65/WG23 Chair]

Approach of Semiotic Triangle —> PoC

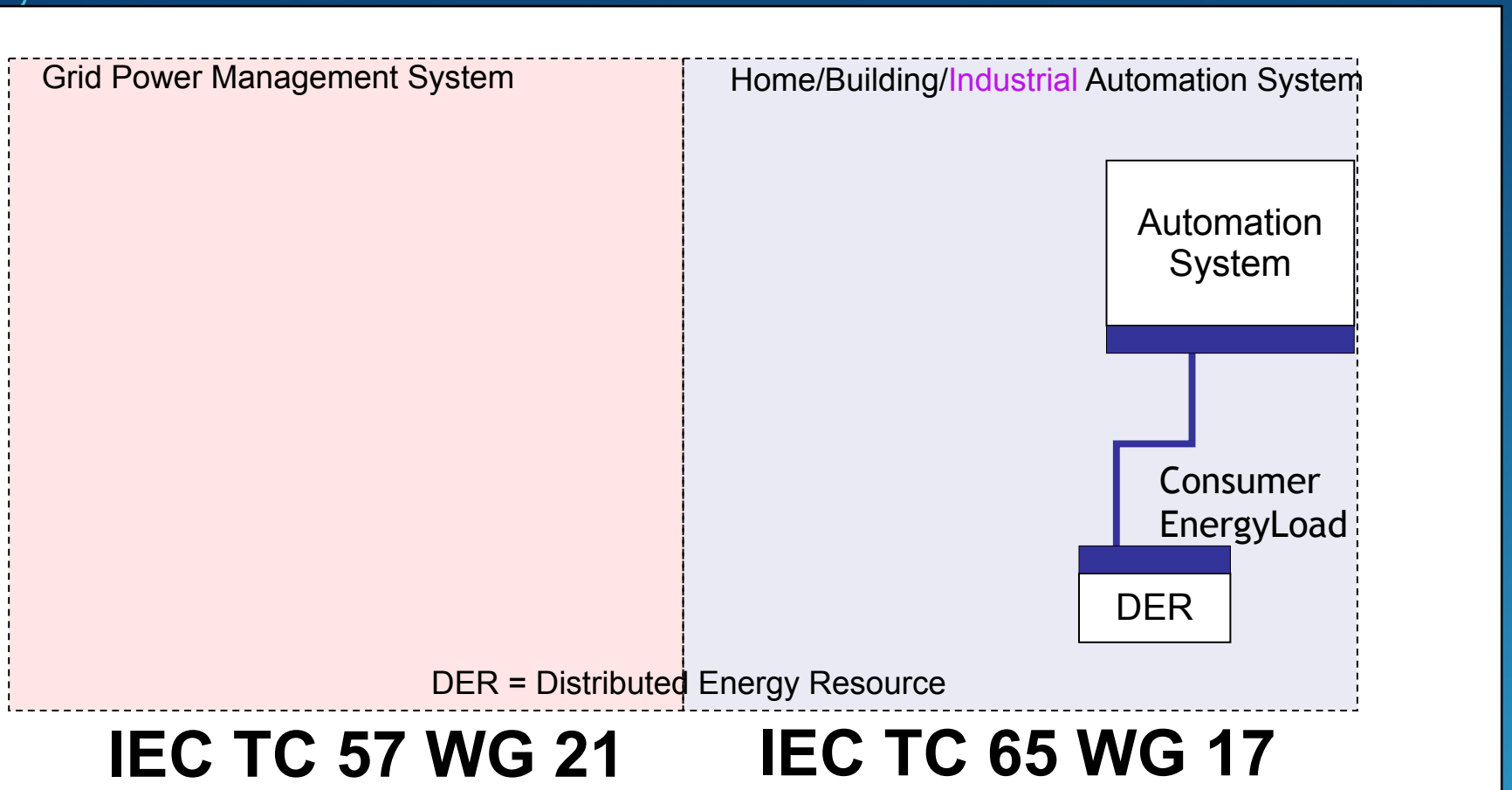
Communicating Graphs (Grid Power MS || IACS)



SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')
[Source: Roland Heidel, TC65/WG23 Chair]

Approach of Semiotic Triangle —> PoC

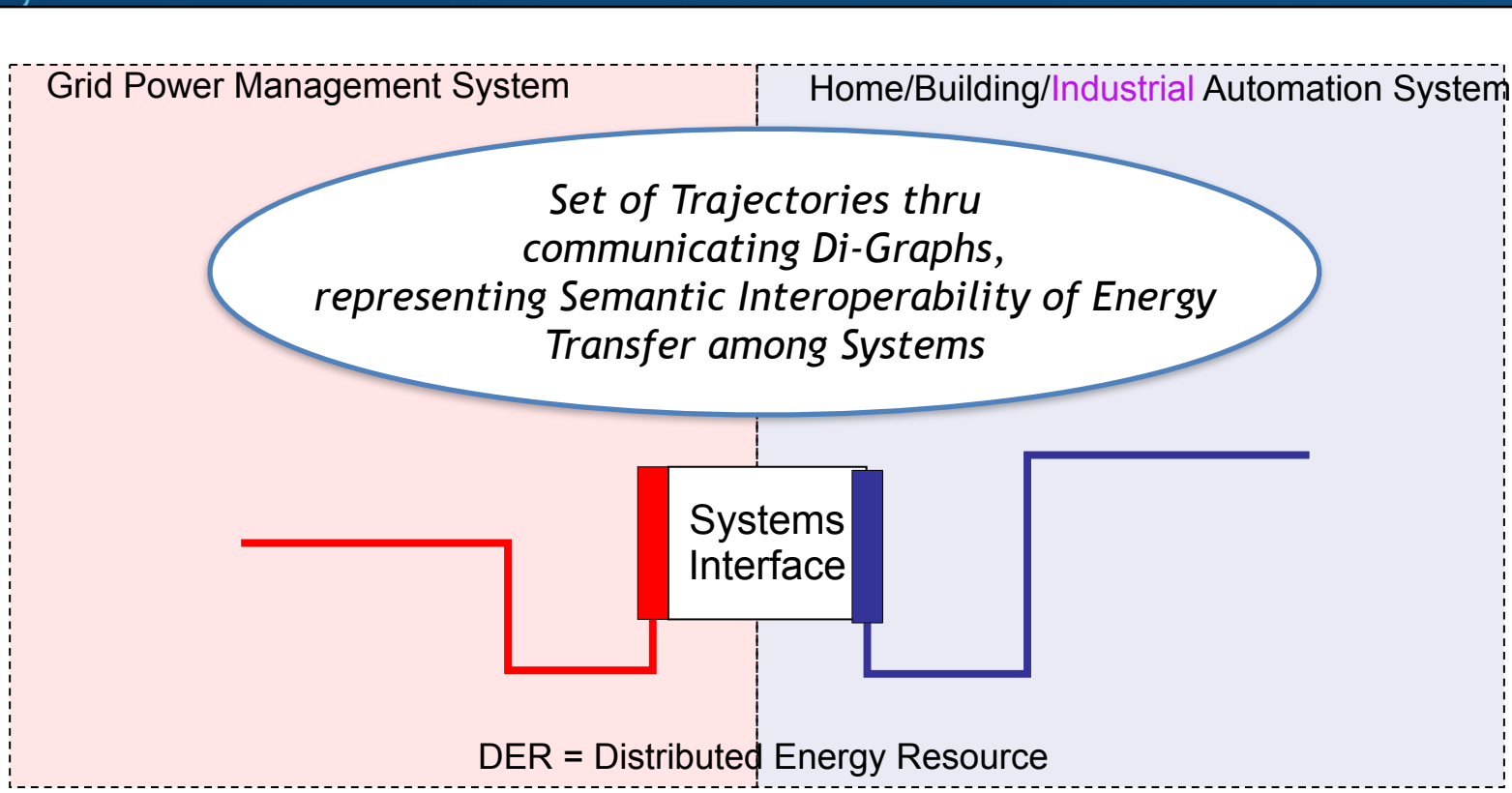
Communicating Graphs (Grid Power MS || IACS)



SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')
[Source: Roland Heidel, TC65/WG23 Chair]

Approach of Semiotic Triangle —> PoC

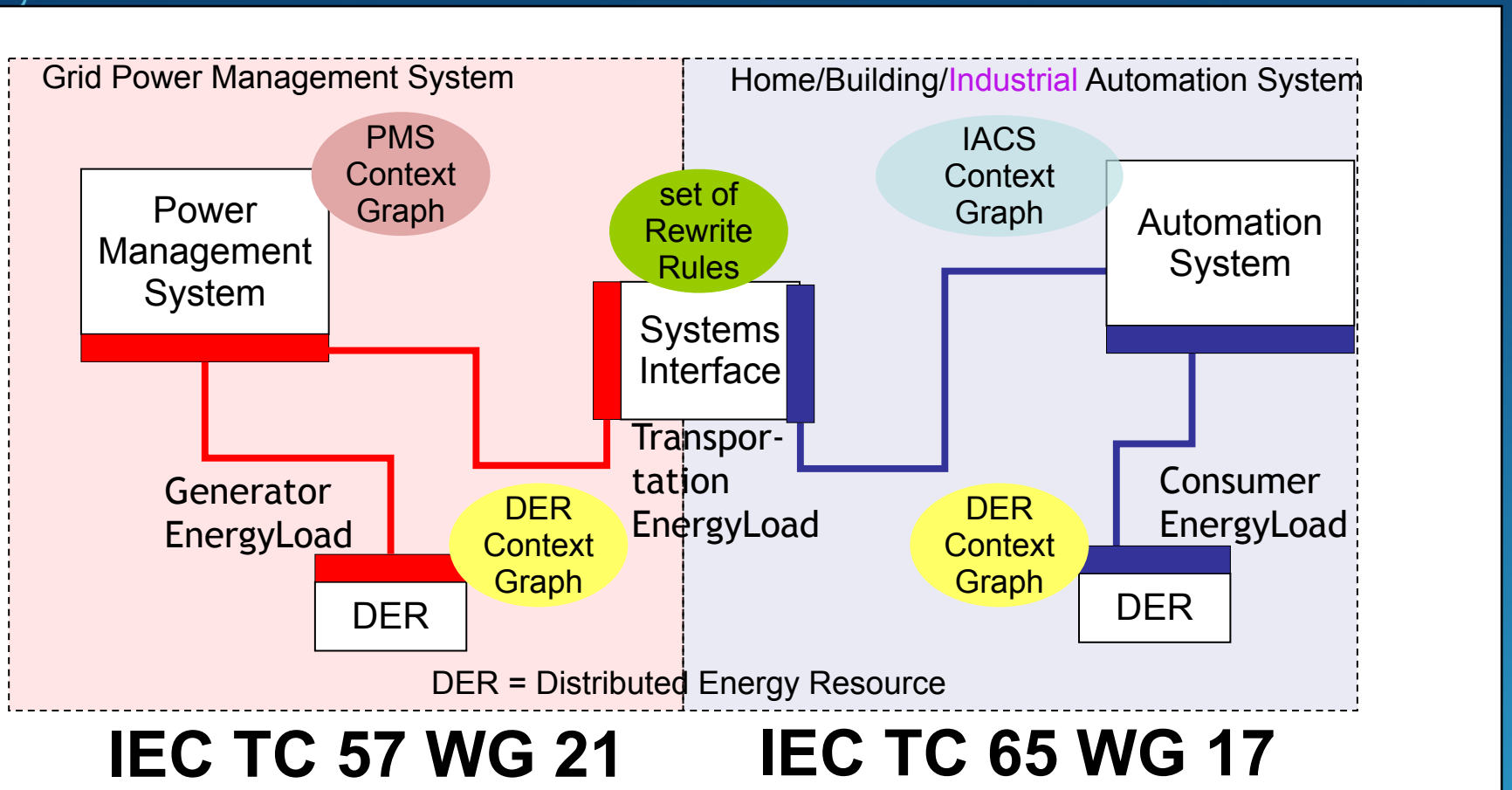
Communicating Graphs (Grid Power MS |SystemInterface| IACS)



SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')
[Source: Roland Heidel, TC65/WG23 Chair]

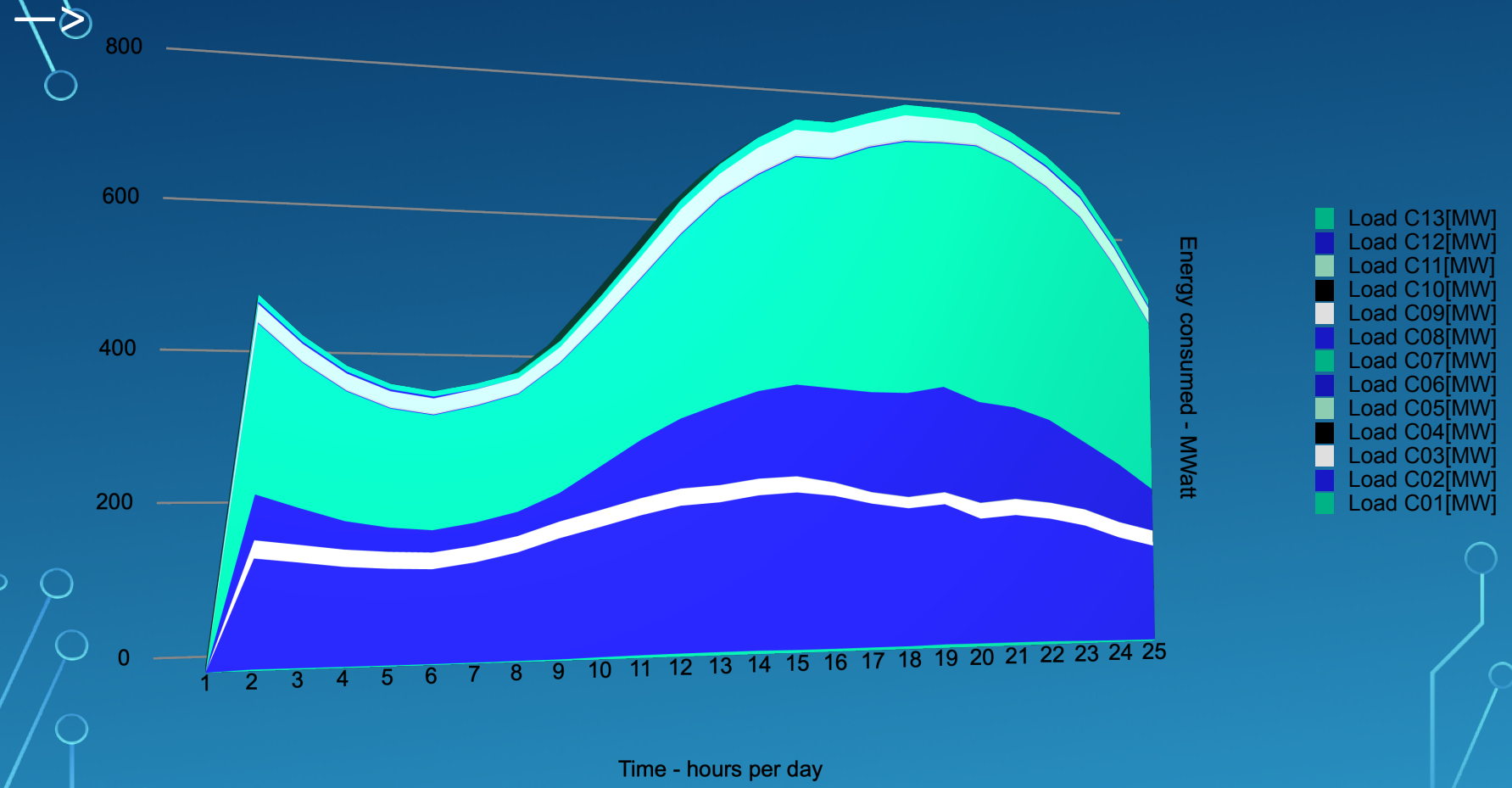
Approach of Semiotic Triangle —> PoC

GMS||IACS Systems Interface:= set of Trajectories through a compound Di-Graph



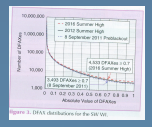
SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')

Source: End Use Models [J.R.Agüero Tools for Success, IEEE PEM figure 3]



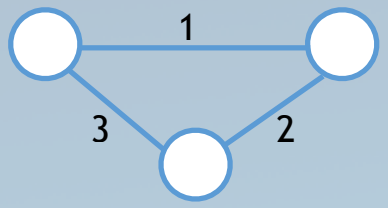
SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')

—> PMS Outages —> Di-Graph Representation



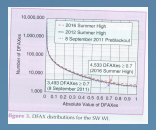
outage event br.1

Vertex: DER Operaton



(235 512 102)

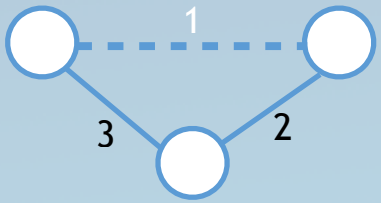
outage event br.3



IncidenceMap1: Stress Factors violated: (Vulnerability x Criticality)

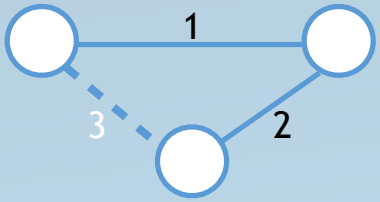
IncidenceMap2: Stress Factors violated: (Vulnerability x Criticality)

Vertex: NW Outage Br1



(0 512>481 102<125)

Vertex: NW Outage Br3



(235>115 512>443 0)

[60:08/20] Rodrigo Moreno et al. From Reliability to Resilience - Planning the Grid against the Extremes, IEEE Power&Energy Magazine, August 2020 (1540-7977/20©2020IEEE)

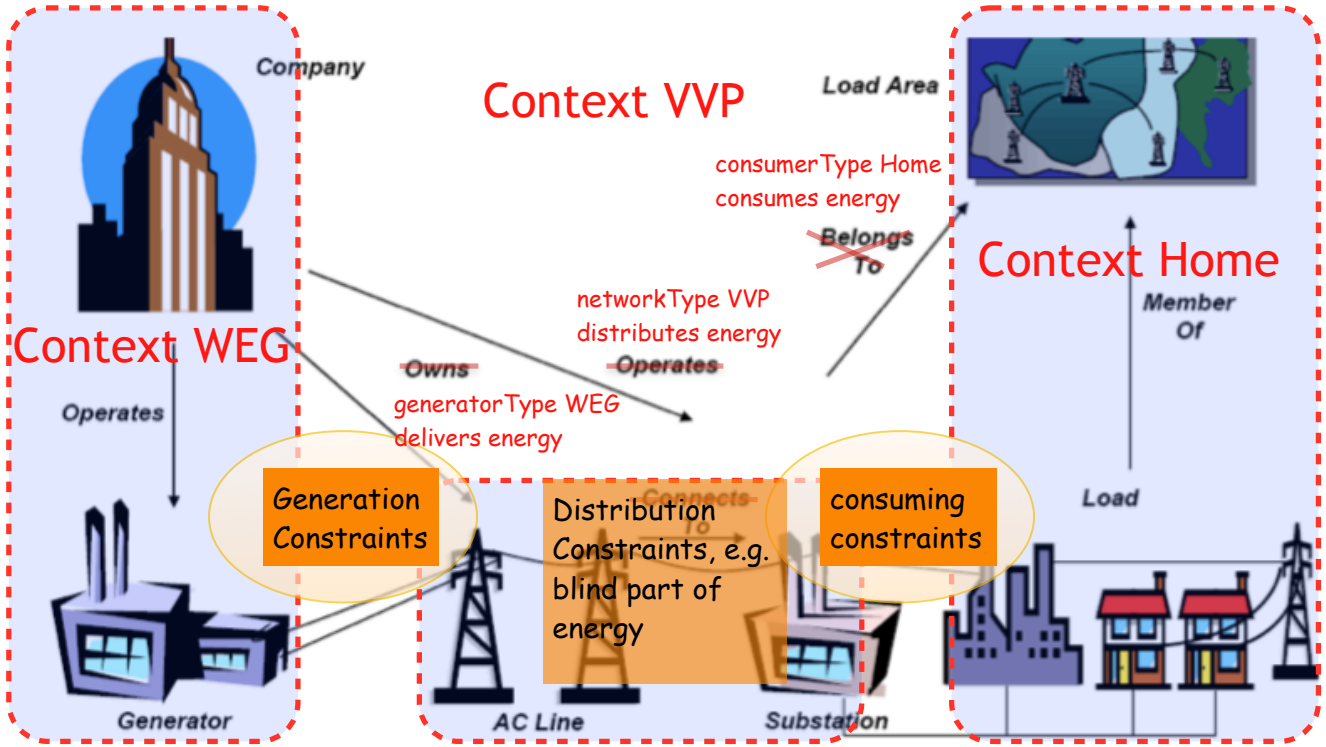
[61:08:20] Hyde M. Merril et al. Nipping Blackouts in the Bud - Introducing a Novel Cascading Failure Network, IEEE Power&Energy Magazine, August 2020 (1540-7977/20©2020IEEE)

SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')
—> Quelle: OFFIS Energie (IEC 61970)

Einführung ➡ Kontext ➡ **IEC 61970** ➡ IEC 61968

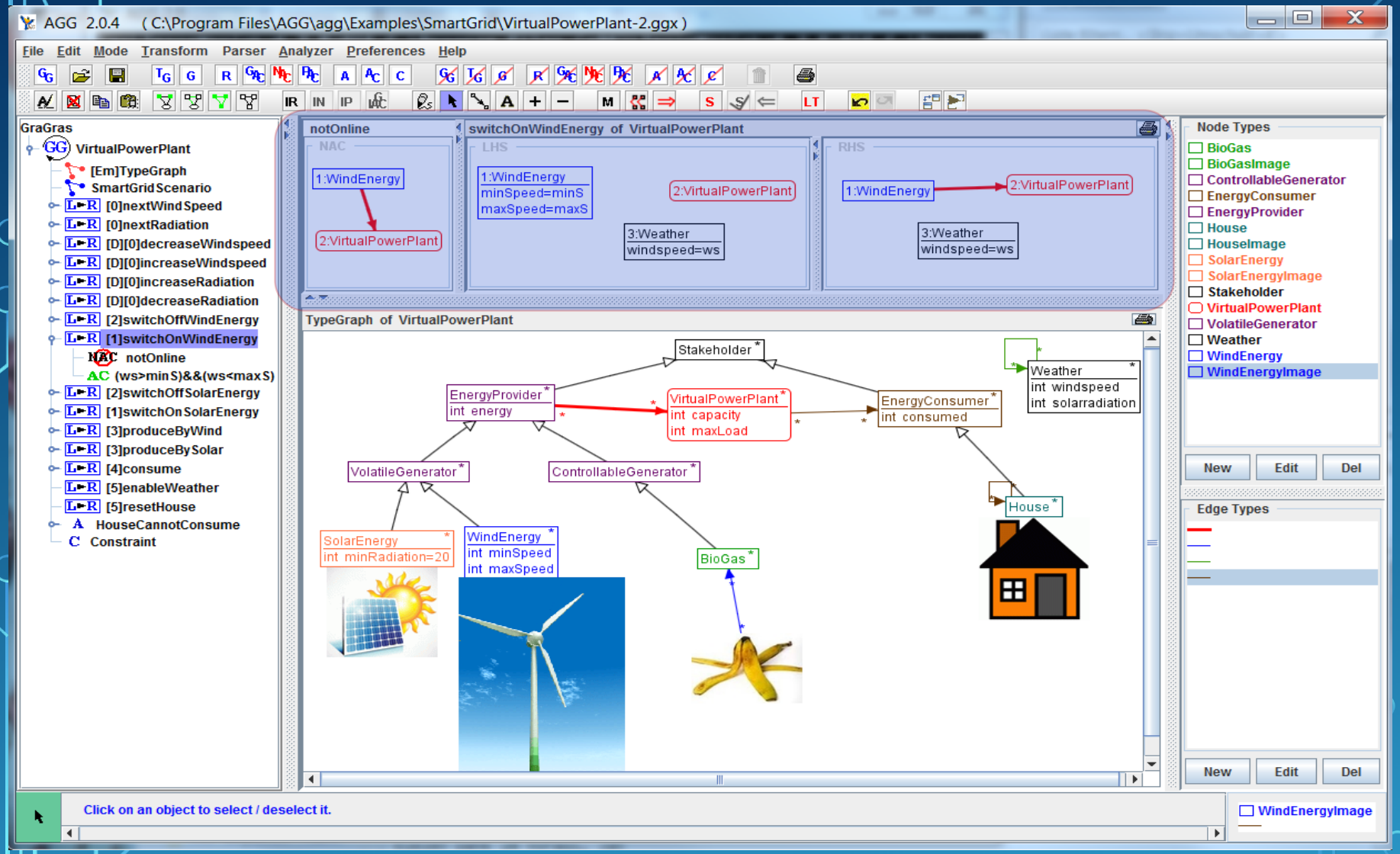
OFFIS Energie
INSTITUT FÜR INFORMATIK

to identify dynamic Relationships:
Events that happen between entries operating in various contexts



SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')

—> Quelle: TUB dAinLab 2017



SEMANTIC I4.0 STANDARDS (DIN/DKE 2020 ‚SEMNORM')

Fin de ma conference – merci beaucoup ➔ Q?/A!

—> Conclusion: to Achieve Semantic Standard Narratives by Graphs

(figure: §5 BDSG Law)

Graph-based Narration

Graph-based Events

persönliche Verpflichtung abgeben

‚Daten Geheimnis' formulieren

Befugnisse erteilen

Signaturen/Formblätter asufüllen

add Personal Obli-gations

add PIIs: Data Secrecy

add Credentials: Warrants

add Signatures: Authorizations

AUFWIEDERSEHEN AT THE 6TH IACS WORKSHOP BERLIN2021

Bye-bye and thank you so much about your attendance and contributions to the 5th GI/ACM I4.0 Standardization WS on Automation & Control Systems (IACS)

Invitation to the 6th GI/ACM I4.0 Standardization WS on IACS in BERLIN2020 ‚Informatics and the UNO Goals of Sustainability‘

Monday, September 28, 2020 IACS WS