Transcontinental Platform for Combined Transport (Kick-off)

23-06-2021

UIRR
UNION INTERNATIONALE POUR LE TRANSPORT COMBINE RAIL-ROUTE

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement No. 860274

Agenda

Welcome & Purpose (UIRR- Ralf-Charley Schultze)

Introduction to Planet LL2 (Panteia – Chris Wensik)

Expert Views from Intermodal Actors (VTG/Hupac)

Hurdles Uncovered (Consilis/UIRR – R. Klüber/E. Feyen)

3 Break-out Sessions (all)

Summary of Results & Farewell

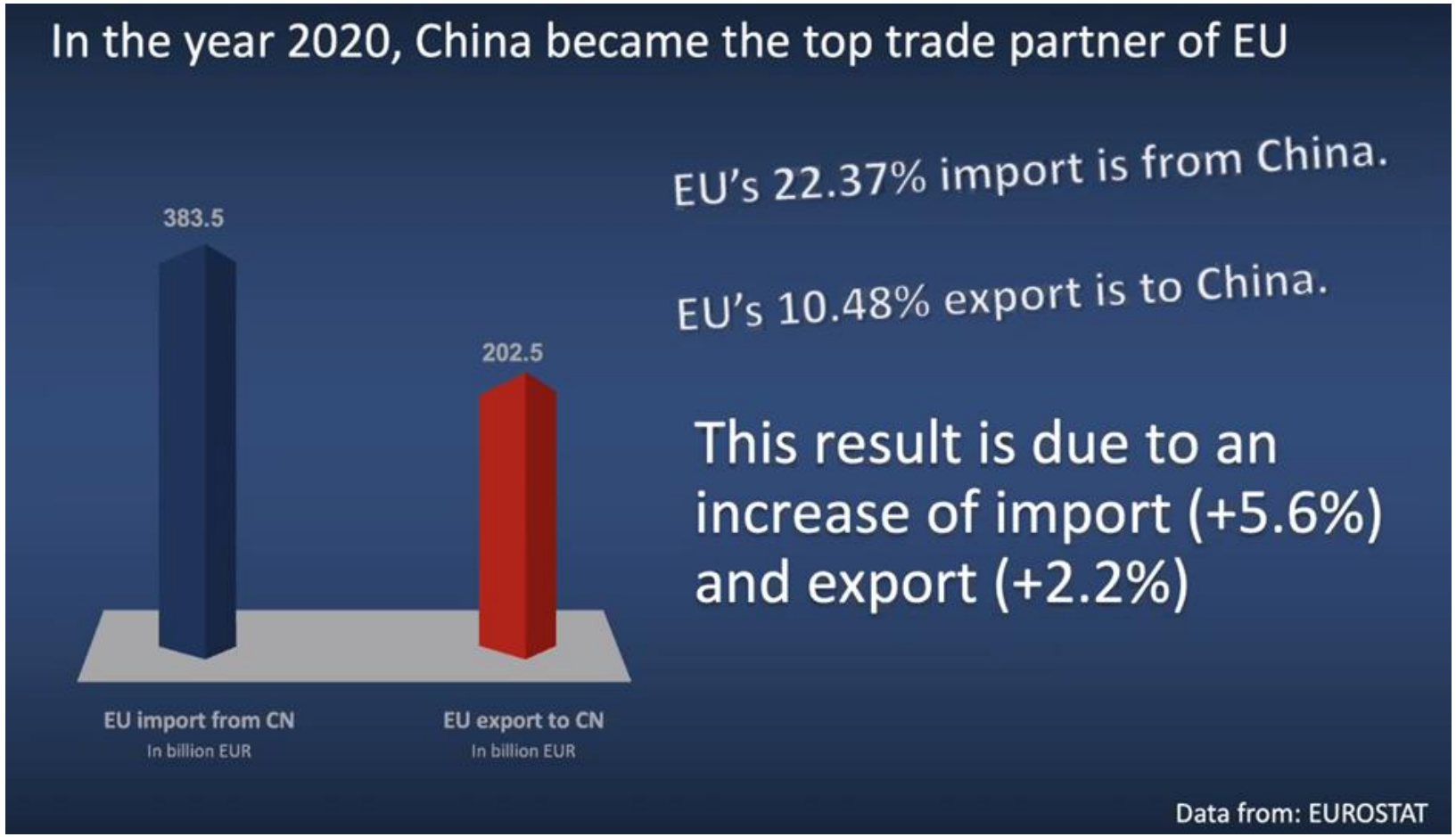
UIRR UNION INTERNATIONALE POUR LE TRANSPORT COMBINE RAIL-ROUTE

planet

Agenda

Welcome & Purpose (UIRR- Ralf-Charley Schultze)
Introduction to Planet LL2 (Panteia – Chris Wensik)
Expert Views from Intermodal Actors (VTG/Hupac)
Hurdles Uncovered (Consilis/UIRR – R. Klüber/E. Feyen)
3 Break-out Sessions (all)
Summary of Results & Farewell

Positive development [EUR] not goods!



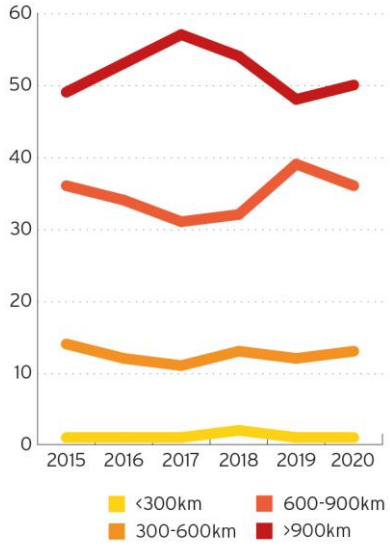
Source: Eurostat to be validated and new presentation (Jet Young)

UIRR 2020 FIGURES

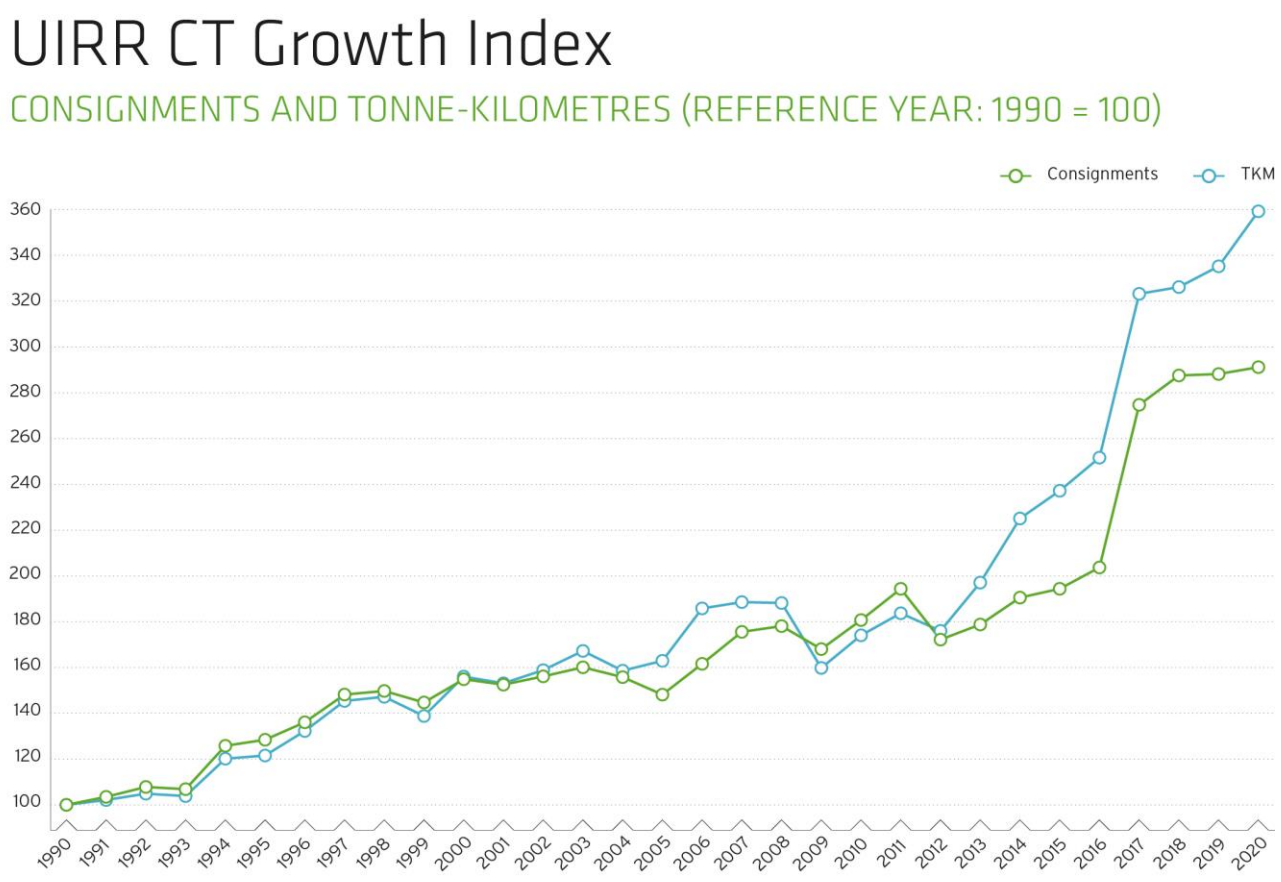
2020 OVERVIEW

	Cross-border			Domestic			Total		
	2019	2020	2020/ 2019	2019	2020	2020/ 2019	2019	2020	2020/ 2019
Number of consignments	3,196,916	3,211,418	0.45%	1,314,657	1,346,694	2.44%	4,511,573	4,558,111	1.02%
containers	2,493,295	2,539,252	1.84%	1,102,316	1,115,020	1.15%	3,595,611	3,654,271	1.61%
(craneable) semi-trailers	563,112	572,145	1.60%	96,630	111,137	15.01%	659,742	683,282	3.45%
complete trucks (RoLa)	140,509	100,021	-28.82%	115,711	120,537	4.17%	256,220	220,558	-16.17%
Average distance	1,048	1,091	4.08%	434	496	14.09%	882	921	4.22%
Billion tkm	72.37	75.83	4.79%	11.17	13.77	23.24%	83.54	89.60	6.77%
Number of TEU	6,393,832	6,422,835	0.45%	2,629,314	2,693,387	2.44%	9,023,146	9,116 222	1.02%

DISTANCE MATRIX

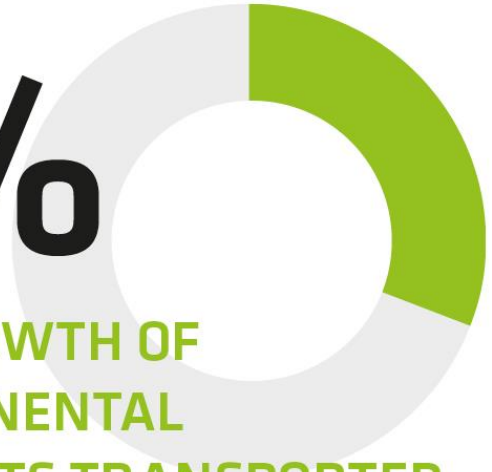


UIRR CT Growth Index 1990 - 2020



*The **UIRR CT Growth Index (Consignments and Tonne-Kilometres)** is a time series of year-on-year growth rates of the number of consignments transported and the tonne-kilometres realised by UIRR members over the years, which has been neutralised of membership effects (of companies joining or leaving the association); hence the growth rate of only those members were taken into account in one year that were able to provide data for the previous year as well. It is assumed that prevailing UIRR membership in any year since 1990 has been representative of the trends of the entire European CT sector.*

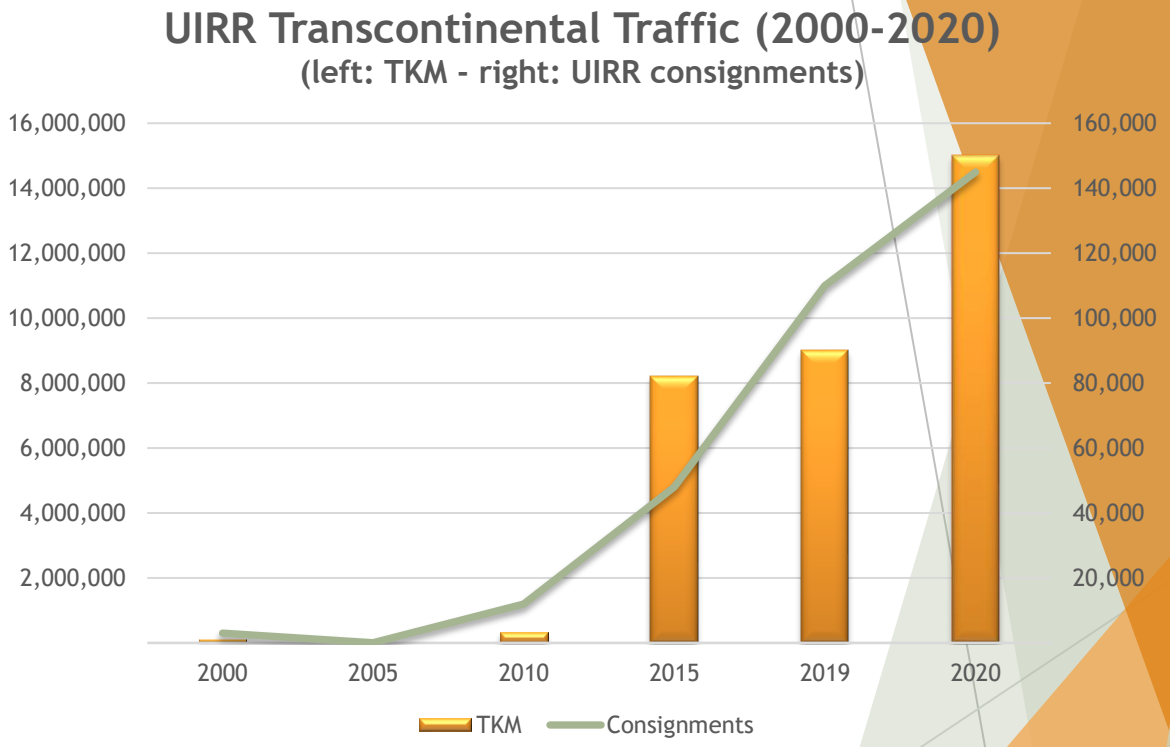
UIRR – Importance of transcontinental transport



31%

WAS THE GROWTH OF TRANSCONTINENTAL CONSIGNMENTS TRANSPORTED BETWEEN ASIA AND EUROPE

UIRR CT Operators carried 144.000 consignments on transcontinental relations in 2020, which represented a 31% increase compared to 2019. Transcontinental intermodal rail is the most dynamically expanding segment of Combined Transport, which currently makes up about 5% of total annual Combined Transport performance.



- *Transcontinental (traffic from/to TR/RU/CN)*
- *A UIRR consignment corresponds to the transport capacity of one full size truckon road (equivalent to 2 TEU)*

Purpose of this group & this kick-off

Ongoing discussion and mobilisation towards the growth of <

- Multi-modality
- Interoperability
- International cooperation

for a greener and improved public-private business ecosystem on transcontinental routes with a focus on the Eurasian railway corridors

Agenda

Welcome & Purpose (UIRR- Ralf-Charley Schultze)

Introduction to Planet LL2 (Panteia – Chris Wensik)

Expert Views from Intermodal Actors (VTG/Hupac)

Hurdles Uncovered (Consilis/UIRR – R. Klüber/E. Feyen)

3 Break-out Sessions (all)

Summary of Results & Farewell

PLANET

Progress towards Federated Logistics through the Integration of TEN-T into A Global Trade Network

23 June 2021

Chris Wensink

Panteia

c.wensink@panteia.nl

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement No. 860274

PLANET Vision

Advance the European Commission's strategy for Smart, Green and Integrated Transport and Logistics by

- **efficiently interconnecting infrastructure** (TEN-T, Rail-Freight Corridors) with geopolitical developments (e.g. future New Silk Road and emerging trade routes),
- **optimising the use of current & emerging transport modes and technological solutions**,
  - ensuring equitable inclusivity of all participants
  - increasing the prosperity of nations,
  - preserving the environment,
  - enhancing Citizens quality of life.

The realization of this vision is what PLANET calls the **Integrated Green EU-Global T&L Network (EGTN)**.

PLANET Mission

Provide **Knowledge** and **Software Assets** supporting the design and operation of Integrated Green EU-Global T&L Networks (EGTN).

Knowledge Assets

- **Analysis Reports, Models and Roadmaps**
  - efficiently interconnecting infrastructure (TEN-T, Rail-Freight Corridors) with existing and emerging trade routes and Legislation and EU policy to impact EGTN
  - optimising End to End Supply Chains in the context of specific corridors through synchromodality / PI models exploiting suitable incentives mechanisms and technological innovations [IoT, BC, Smart Contracts, autonomous technologies, 5G, 3D printing, UAVs and hyperloop]

A Cloud-based Open EGTN Infrastructure

- (integrating existing assets and Innovative EGTN Assets)
- EGTN Connectivity
- Industry blockchain Interoperability Layer / Blockchain Integrator
- Predictive and optimisation analytics EGTN Algorithms
- Smart Hubs / Intelligent PI Nodes

PLANET Focus Areas

Swimlane 1 – Simulation & Modelling

- Understanding the **economic opportunities, risks, costs** in fusing actors and supply chains in and outside Europe along new and emerging trade corridors
- Simulation and Modelling would be an incredibly valuable tool

Swimlane 2 - Technology

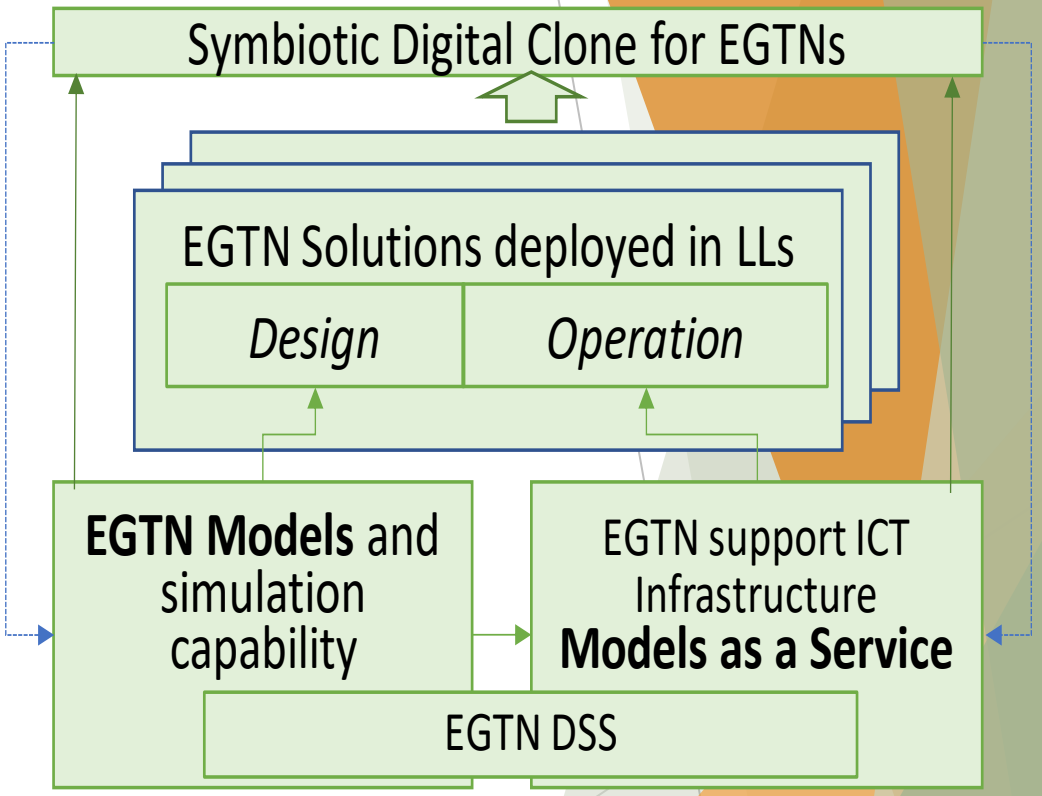
- A very much applied and practical approach for **realising the EGTN platform**
- Reuse assets, such as BC, from projects like ICONET, SELIS, FENIX,
- Give the industry (through open source) a starting point to evolve and shape as things progress.
- less R&D, more “bringing things together”
- the EGTN platform will include **early protypes of innovation components**
  - EGTN Connectivity
  - Industry blockchain Interoperability Layer / Blockchain Integrator
  - Predictive and optimisation analytics EGTN Algorithms
  - Smart Hubs / Intelligent PI Nodes

EGTN Concept

Green **EU-Global Trade & Logistics Networks** (EGTN) are **international logistics systems** that:

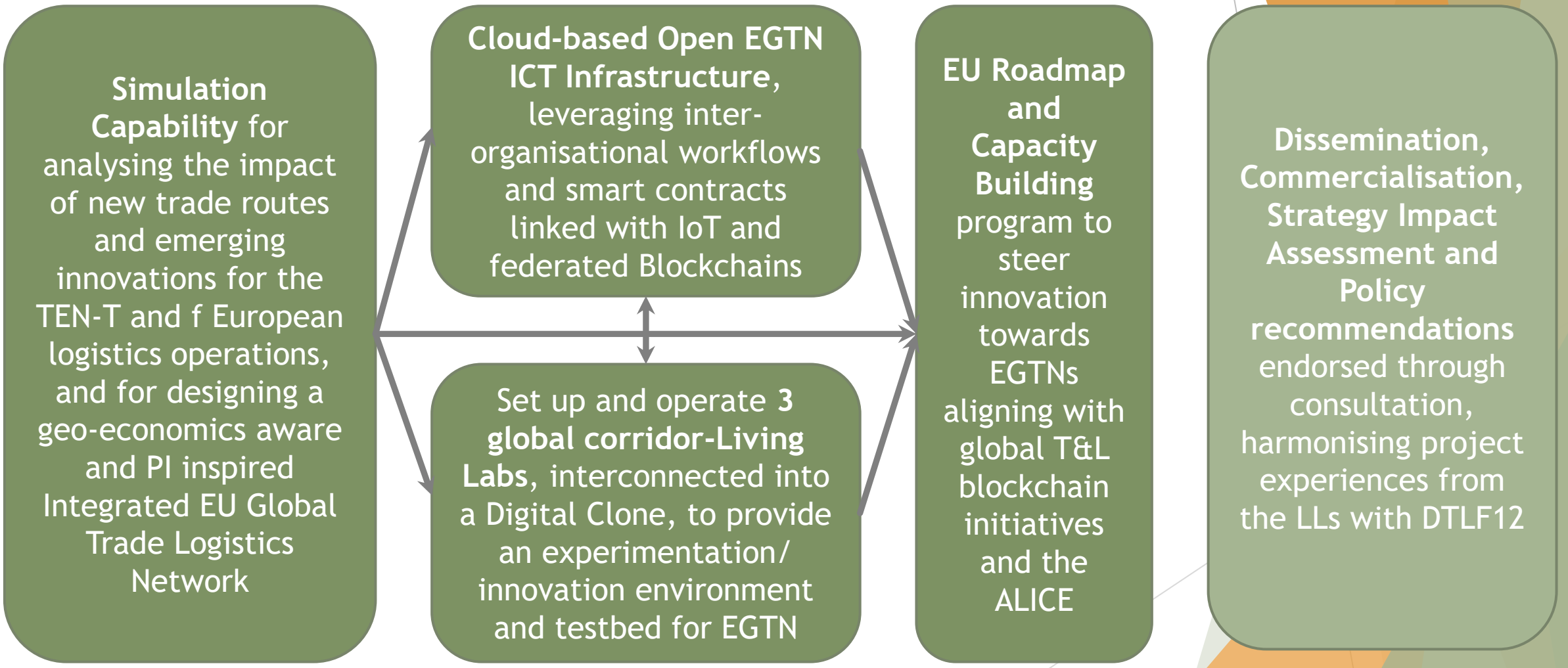
1. make **use of physical and digital infrastructures**;
2. aim at **operational excellence** for customers and external stakeholders;
3. incorporate geo-economic context;
4. are **enabled by** (disruptive) transport & logistics concepts and technologies.

The development of EGTN in PLANET encompasses **physical, technological and governance dimensions**



Objectives & Measurable Outputs

PLANET Objectives



Living Lab 2

Synchromodal dynamic management of TEN-T & intercontinental flows promoting rail transport

- **UC1: Synchromodality in a BC enabled Platform** utilizing advanced IoT, supporting BlockLab customers & communities to create the best multi-modal alternatives for logistics solutions within the LL2 corridors
- **UC2: investigate Eurasian rail freight expansion in the LL2 corridor**. UIRR will provide data from services and report on key issues to be addressed for infrastructure development and examine potential for expanding services in the corridor and implement (in a test environment) the use of BC on rail freight transport between China and Europe.
- **UC3**: analyse LL2 corridor flows and assess the implication for TEN-T infrastructure

- Assess implications of new trade routes and how best to maximise the EU's economic prospects through strategic planning
- Examine the role of new technologies (e.g. BC) on intercontinental rail services promoting EU's strategic cooperation with China and USA
- Leverage BC interoperability and federation for Supply Chain platforms extending the Blocklab repository knowledge hub with synchromodality models as a service with predictive and prescriptive analytics enabling corridor actors to establish the best multimodal solutions that can optimise the interconnection of supply chains along the TEN-T Corridors a "green" Global T&L context

Agenda

Welcome & Purpose (UIRR- Ralf-Charley Schultze)
Introduction to Planet LL2 (Panteia – Chris Wensik)
Expert Views from Intermodal Actors (VTG/Hupac)
Hurdles Uncovered (Consilis/UIRR – R. Klüber/E. Feyen)
3 Break-out Sessions (all)
Summary of Results & Farewell

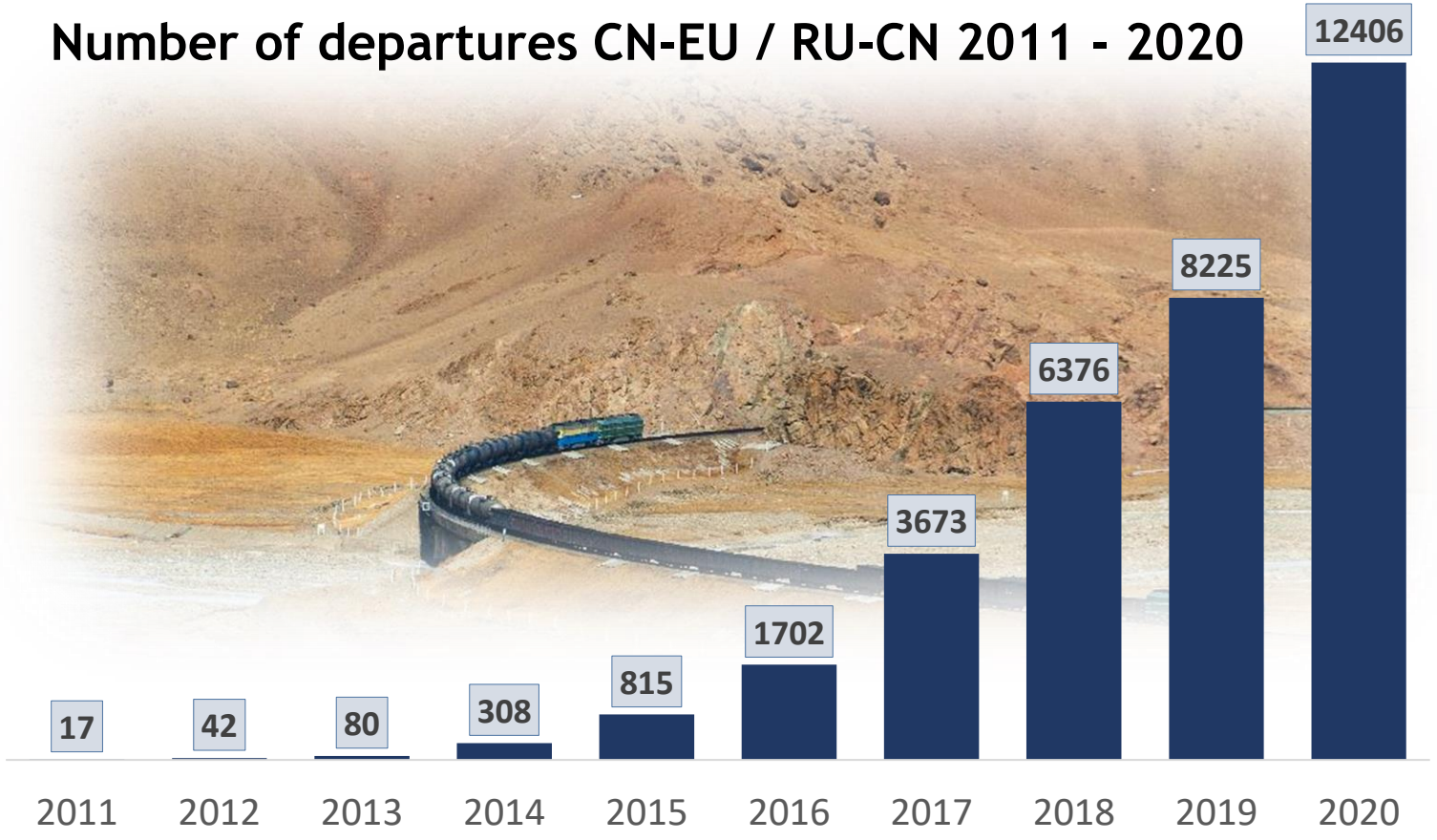
HUPAC
Director Development Russia & CIS

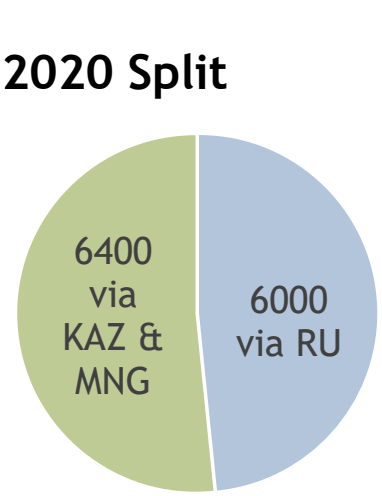
VTG AG
Business Development Manager Eurasia & Far East

Agenda

- Welcome & Purpose (UIRR- Ralf-Charley Schultze)
- Introduction to Planet LL2 (Panteia – Chris Wensik)
- Expert Views from Intermodal Actors (VTG/Hupac)
- **Hurdles Uncovered (Consilis/UIRR – R. Klüber/E. Feyen)**
  - **The Challenge**
  - Frist Findings
- 3 Break-out Sessions (all)
- Summary of Results & Farewell

Growing Market of Eurasia Rail Transportation





Source: UIC Webconf-Call presented by Jet Young, China Rail (10.06.2021) based on China Rail and China customs

Focus Routes for this Workshop

R1 Northern
(via Vladiwostok)

R2 Eurasian
(via Moscow & Kazakhstan)

R3 South
(via Caspian)

Where there is a challenge there is an opportunity

What all stakeholders want is undisputed:

- Green
- Fast
- Reliable
- Cost-efficient
- Customer-oriented

Selection of challenges:

1) Costs
2) Congestions at borders
3) Regulatory hurdles to efficiency

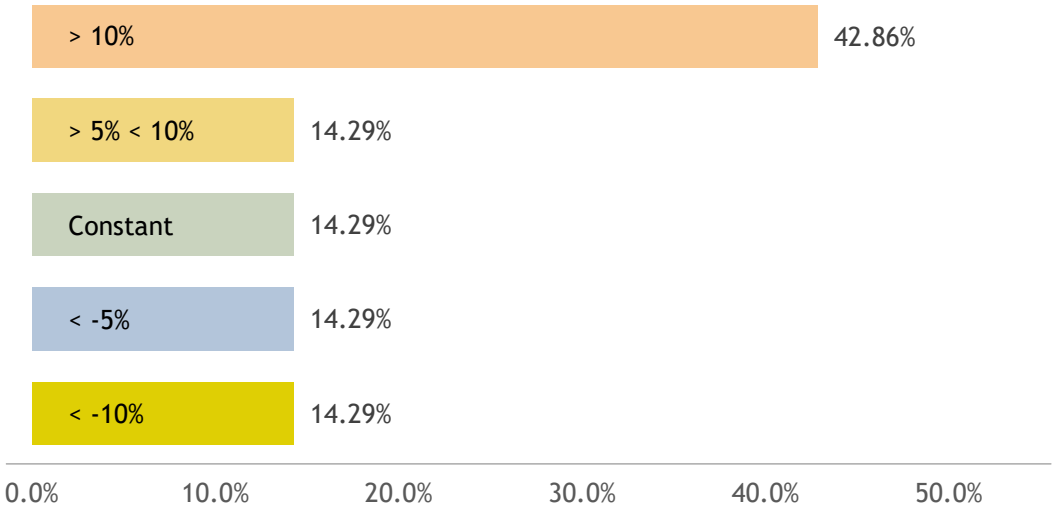
Identify the best approach to leverage the most benefits for all stakeholders?

Agenda

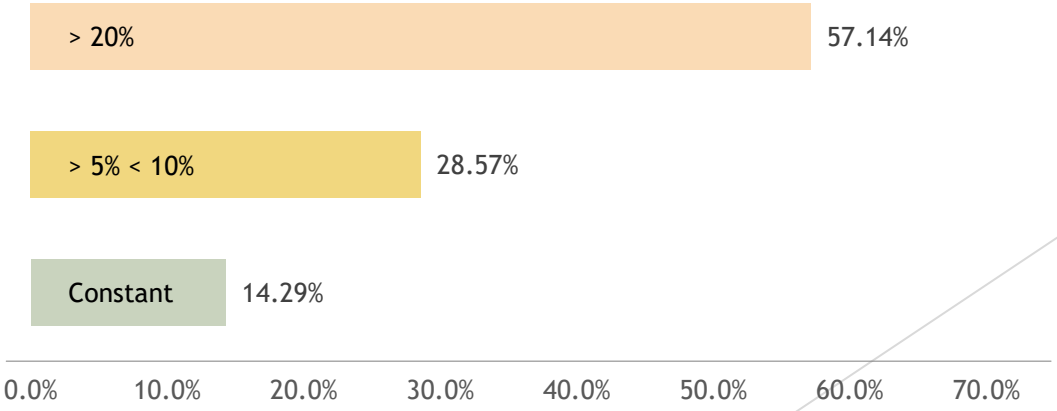
- Welcome & Purpose (UIRR- Ralf-Charley Schultze)
- Introduction to Planet LL2 (Panteia – Chris Wensik)
- Expert Views from Intermodal Actors (VTG/Hupac)
- **Hurdles Uncovered (Consilis/UIRR – R. Klüber/E. Feyen)**
  - The Challenge
  - **Frist Findings**
- 3 Break-out Sessions (all)
- Summary of Results & Farewell

High growth is expected to grow further for majority of road-rail stakeholders

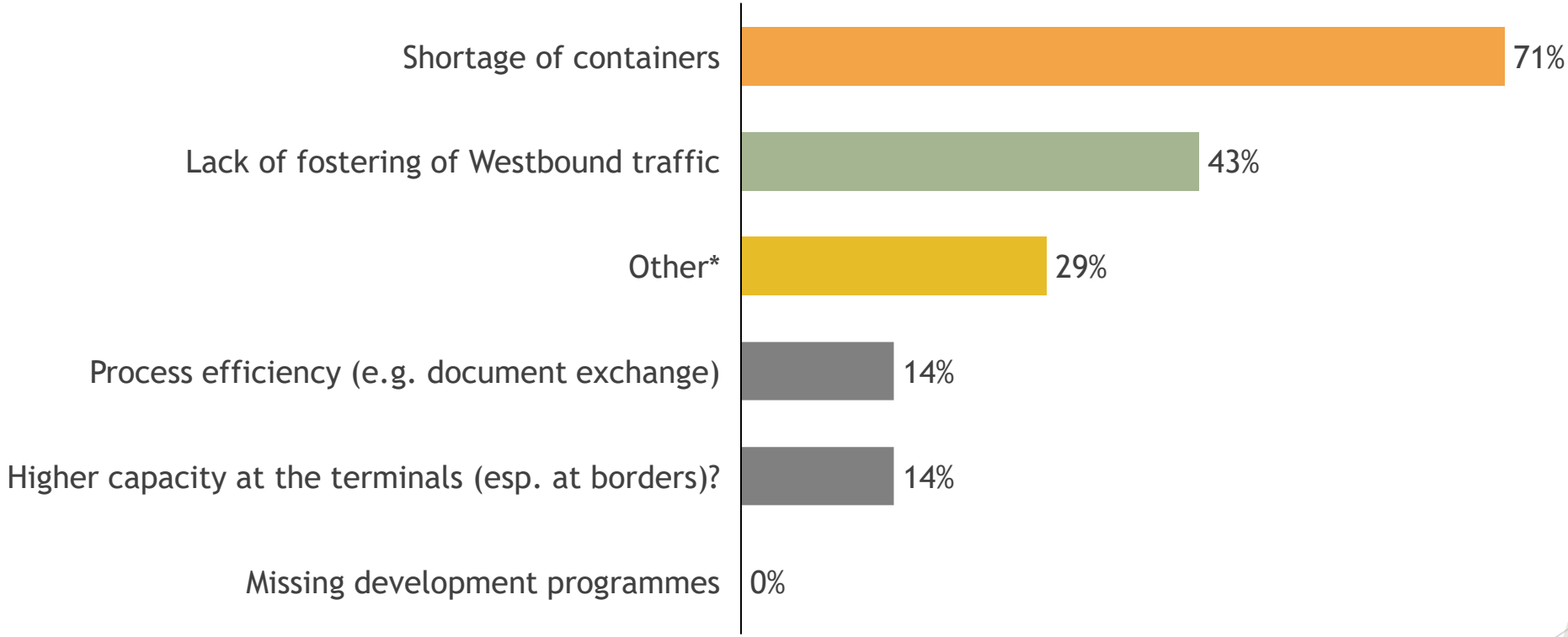
Evolution of shipping volume to / from China (last 2 years)



Expected average annual growth in rail-road transport to / from China (next 3 years)



Key business hurdles towards more rail traffic?



Source: UIRR member survey on EU-CN rail-road services (06/2021) * diverse reasons

Identification of the most suitable way & lever approach

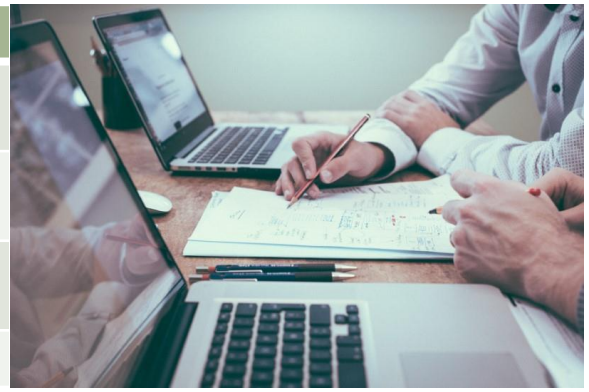
Expert Interviews

Questionnaire

Workshop (today)

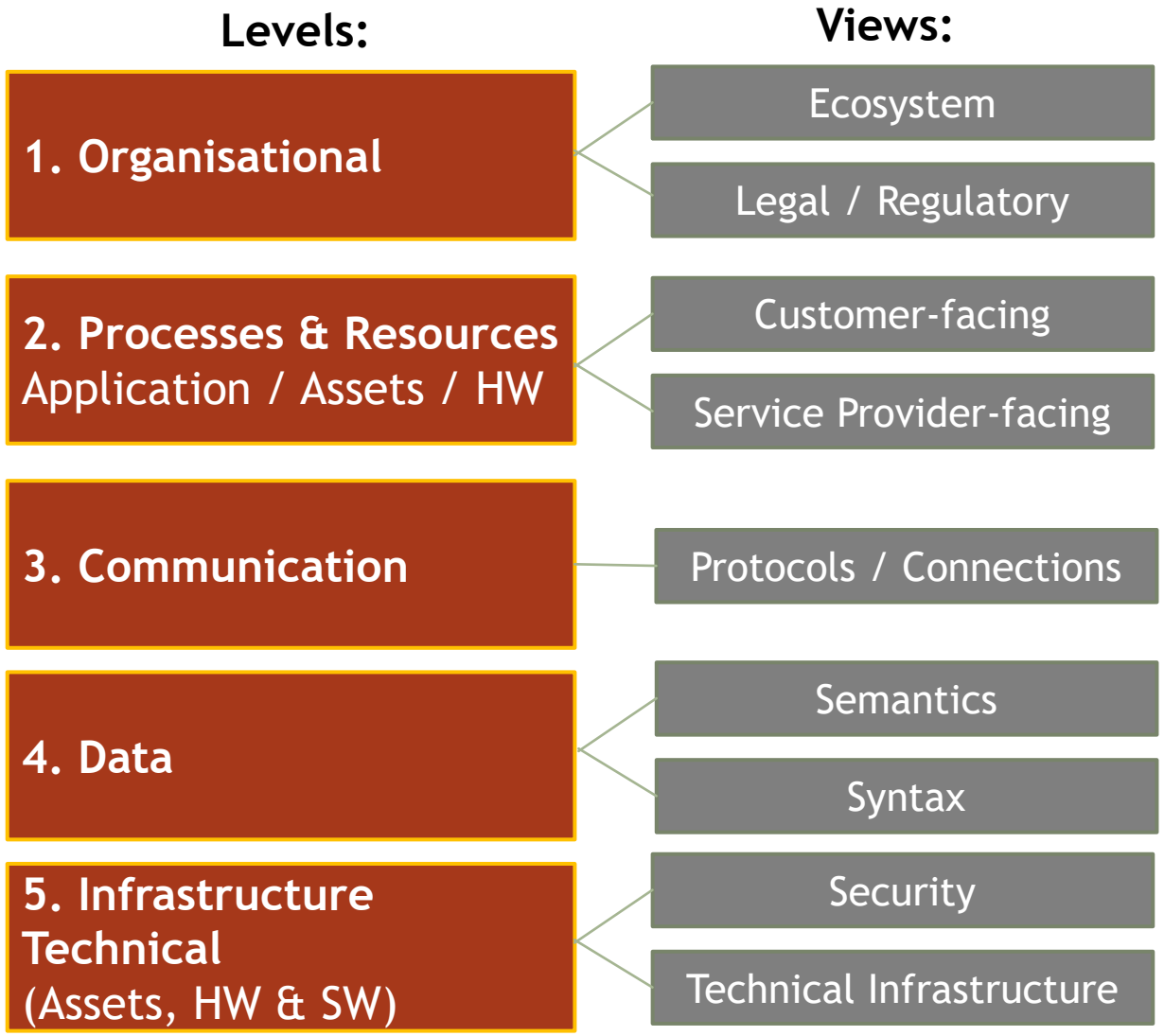
Multivariant Scoring Model

	R1:Northern	R2: Kazakhstan	R3: Caspian
Ecosystem & Political			
Documents & Information			
Process & Assets			
IT Solutions			



Most successful pilot for EU-CN road-rail shipments

Framework to increase interoperability



- Apply framework to capture organisational, physical, digital & infrastructure interoperability aspects in road-rail transport
- Derive measures to improve

Source: Adapted from Nair/Klüber (2020) DIGITAL CONTACT TRACING INTEROPERABILITY: BALANCING PRIVACY AND PUBLIC HEALTH CONCERNS TO FIGHT COVID-19, In Diplomatic Courier (25.09.2020)
https://www.diplomaticourier.com/posts/digital-contact-tracing-interoperability-balancing-privacy-and-public-health-concerns-to-fight-covid-19

First findings on key hurdles to (2-5 years horizon)

1. Manual customs processes
2. Increase of train length in Europe
3. Imbalance of Eastbound and Westbound traffic
4. Scarcity of wagons
5. Missing departure slots in China (current dispatch planning)
6. Eastbound cost disadvantage (no/less subsidizes)
7. Reduction of Westbound subsidizes
8. Lack of interoperability of processes and IT systems

Agenda

- Welcome & Purpose (UIRR- Ralf-Charley Schultze)
- Introduction to Planet LL2 (Panteia – Chris Wensik)
- Expert Views from Intermodal Actors (VTG/Hupac)
- Hurdles Uncovered (Consilis/UIRR – R. Klüber/E. Feyen)
- **3 Break-out Sessions (all)**
  - Presentation of Findings
  - Voting on Planet LL2 pilot and future of EU-CN traffic
- Summary of Results & Farewell

Break-out Session Motivation

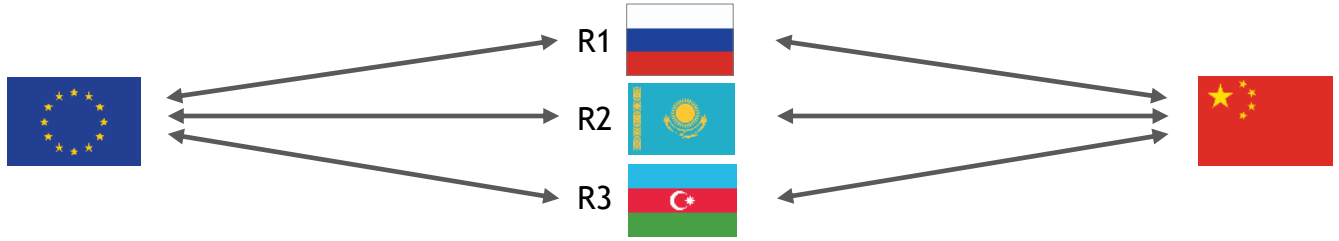
- Horizon: thinking 2-5 years ahead
- Focus: Start thinking about the hurdles and needs first
- Choose your session:

Session	Hurdles, Issues	Resolution	Conclusoin
BS1: Political & Stakeholder (Ecosystem)			
BS2: Document & Information Interoperability			
BS3: Process & Assets			

Breakout session agenda

#	Task	Who	Time
1	Introduction of participants (Name, Organisation, Key interest in EU-CN improvements)	all	30s
2	Problem framing – Key issues, hurdles and needs	volunteers	15 min
3	Resolution & synergies	volunteers	15 min
4	Online voting	all	5 min
5	Result presentation of each breakout session	Moderators	5 min

BS1: Political & Stakeholder Motivation

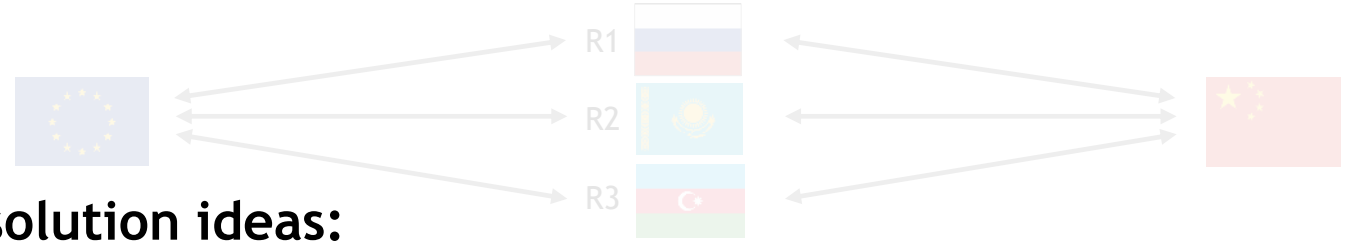


Governments Regulators	EC & National Regulators		Government		Government
			OSJD		CN Platforms
Customers	Shipper / Consignee				Consignee / Shipper
Logistics Service Providers	LSP->CTO->TO->RU->IM->TO	Border Trans-shipment	TO->RU->IM->TO	Border Trans-shipment	TO->IM->RU->TO->CTO->LSP
Logistics Associations	UIRR, UIC, Ferrmed ESC, Clecat, Fiata		CCTT, GETO		diverse
Asset Providers	• Wagons • Locomotives • Signaling etc.				

Legend

LSP: Logistics Service Provider
CTO: Combined Transport Operator
TO: Terminal Operator
RU: Railway Undertaking
IM: Infrastructure Manager

BS1: Political & Stakeholder Motivation



Stakeholder Resolution ideas:

1. **Which lever can help in 2-3 years to move more volume by winning & convincing critical stakeholders?**
2. **Which technological solution would you see to support?**
3. **Where could the Planet project support best?**

Governments Regulators	EC & National Regulators		Government		Government
Customers	Shipper / Consignee				CN Platforms Consignee / Shipper
Logistics Service Providers	LSP->CTO->TO->IM->RU->TO	Border shipment	TO->IM->RU->IM->TO	Border Trans-shipment	TO->IM->RU->TO->CTO->LSP
Logistics Associations	UIRR UIC, ESC		CCTT, OSJD		diverse
Asset Providers	• Wagons • Locomotives • Signaling etc.				

Legend

LSP: Logistics Service Provider
CTO: Combined Transport Operator
TO: Terminal Operator
RU: Railway Undertaking
IM: Infrastructure Manager

BS1: Summary

Challenges/ Bottlenecks

1. Stakeholders are mainly competitors
2. Infrastructure bottlenecks
3. Operational bottlenecks incl. dangerous goods
4. Transparency of the services
5. Bundling of volumes is crucial

Solution/Ideas

1. Meeting with CTOs on intercontinental corridors, CTOs are bearing the risk of train utilization. Intercontinental platform
2. Achieve balance of flows East and Westbound integrating Japan and South Corea.

Remarks/Objections

1. Chinese subsidies will only be given to Chinese companies, not to European companies.
2. Chinese regions should collaborate, in order to have more regular services.

Information/Perceptions

1. Europe needs a strategy on its own for the silk road development,
2. The CTOs that should participate in the next workshop are: UTLC, Transcontainer, FELB, RTSB, Interrail, Hupac, VTG, Bahnoperator, RCO, possibly DB Eurasia if interested
3. Collaboration with EU Commission – connectivity platform
4. Importance of terminals

BS2: Interoperable Documents & Information

R1

R2

R3

1. Where a major improvement generates most benefits?

1. Booking reservation	
2. Consignment notes	1
3. Customs documents	
4. ETA	
5. ETD	

Comments:

- Consignment notes focus for the RFC Nordic-Baltic
- Customs documents are also relevant

BS2: Interoperable Documents & Information

R1

R2

R3

2. What is the biggest hurdle to increase interoperability in EU-CN transports & why?

1. Lack of standards	3
2. Multiple languages	
3. Slow & paper-based	1
4. Only national standards	3
5. No efficient interfaces	2

Comments:

- ...

Polling

BS2: Interoperable Documents & Information

Interoperability of documents:

1. **Which lever can help in 2-3 years to improve the use of digital and interoperable documents?**

2. **Which IT technological solution would you see to best support?**
   a) **Interoperability of documents?**
   b) **Multi-national Platforms?**
   c) **Interoperable platforms?**

3. **Where could the Planet project support best?**

BS2: Summary

Challenges/Bottlenecks

1. DG documents not accepted by ML CN
2. Even Non-DG certificates are very time consuming
3. Lack of digitalization of documents
4. Consignment note focus for RFC Nordic-Baltic
5. Paper-based documents still dominant (also for customs and DG)

Solution/Ideas

1. Consignment note digitalization is the potential low hanging fruit and focus of the RFC Nordic-Baltic
2. Alignment with Nordic-Baltic RFC planned on their requirements
3. Centralized solution not likely within 2-5 year horizon as stakeholders would resist, interoperable path more success likelihood

Remarks/Objections

1. Risk of political situation with Belarus relations
2. Stakeholder buy-in required to establish faster standardisation and harmonisation

Information/Perceptions

1. Exchange to on project level
2. What is the digitalization acceptance
3. Unified Railway Standards (SMGS)

BS3: Processes & Assets

R1
R2
R3

1. Which process is the most critical?
2. Which are missing?

	Reservation
	Booking to Pay
	ETA & ETD
3	Customs
1	Infrastructure
2	Assets

Comments:

- Missing: train operations (total weight, capacity management)
- Assets: wagon technology, railway gauge, types of loading units
- Infrastructure: platforms/terminals included

Polling

BS3: Processes & Assets

R1 R2 R3

3. Which assets are most critical for future successful operations (time/cost/quality)?

Reservation

Booking to Pay

ETA & ETD

Customs

Infrastructure & Service

1) Signaling harmonization
2) Language harmonization
3) Harmonized gauges

Assets

1) Wagons types
2) Wagon intelligence
3) Automated coupling systems
4) Autonomous locomotives

Comments:

- Infrastructure; train length (different between the routes)
- Wagons (with or without UIC gauge): all types should be accepted
- ILUs: all types should be accepted – focus on reefer units and goods

BS3: Processes & Assets

R1
R2
R3

4. Which asset management process needs standardization?

Reservation

Booking to Pay

ETA & ETD

Customs

Infrastructure & Service

1) Signaling harmonization
2) Language harmonization
3) Harmonized gauges

Assets

1) Wagons types
2) Wagon intelligence
3) Automated coupling systems
4) Autonomous locomotives

Comments:

- ILUs: in terms of dimensions (interoperable components)
- Infrastructure parameters (total train length and weight)

BS3: Processes & Assets

Resolution of frictions:

1. **Which measures help to avoid bottlenecks most effectively in 2-3 years to move more volume to rail-road traffic?**

2. **Which IT technological solution would you see to support?**

3. **Where could the Planet project support best?**

Summary

Challenges/ Bottlenecks

1. Improve train operations and processes (train to be managed as easy as road)
2. Better coordination and governance
3. Acceptance of all types of assest and goods

Solution/Ideas

1. Clear and transparent governance structure for Eurasian corridors (UN/ECE, OSJD, sector…)
2. Wagons: (1) electrification (2) need for refilling stations on specific cross-border points
3. ILUs: pool management, register, IT tools

Remarks/Objections

1. Community involvement needed (role of industry associations)
2. Too many political and/or regional approach

- …

Information/Perceptions

1. Document management is also a prerequisite to improve train operations
2. Reefer / chemical goods: ‘must’ markets

Agenda

- Welcome & Purpose (UIRR- Ralf-Charley Schultze)
- Introduction to Planet LL2 (Panteia – Chris Wensik)
- Expert Views from Intermodal Actors (VTG/Hupac)
- Hurdles Uncovered (Consilis/UIRR – R. Klüber/E. Feyen)
- **3 Break-out Sessions (all)**
  - **Presentation of Findings**
  - Voting on Planet LL2 pilot and future of EU-CN traffic
- Summary of Results & Farewell

Agenda

- Welcome & Purpose (UIRR- Ralf-Charley Schultze)
- Introduction to Planet LL2 (Panteia – Chris Wensik)
- Expert Views from Intermodal Actors (VTG/Hupac)
- Hurdles Uncovered (Consilis/UIRR – R. Klüber/E. Feyen)
- **3 Break-out Sessions (all)**
  - Presentation of Findings
  - **Voting on Planet LL2 pilot and future of EU-CN traffic**
- Summary of Results & Farewell

Pilot route choice (key USPs)

Polling

1. Northern
(via Vladiwostok)

- Only path allowing dangerous goods via rail
- Direct train offers fastest path to ML CN

- Additional short sea leg

2. Eurasian
(via Kazakhstan)

- Most used route
- Highest frequency

- Least lever due to large investment
- Congestion risk

3. South
(via Caspian Sea)

- Less used route with highest improvement potential

- Slowest
- Most transshipment points

Agenda

- Welcome & Purpose (UIRR- Ralf-Charley Schultze)
- Introduction to Planet LL2 (Panteia – Chris Wensik)
- Expert Views from Intermodal Actors (VTG/Hupac)
- Hurdles Uncovered (Consilis/UIRR – R. Klüber/E. Feyen)
- 3 Break-out Sessions (all)
- **Summary of Results & Farewell**

UIRR

Eric Feyen / Dr. Roland Klüber

efeyen@uirr.com / roland.klueber@consilis.com