Lean Construction & Integrated Project Delivery in Finnish Transport Infrastructure Agency
My key points will be

- FTIA
- Why Integrated Project Delivery (IPD)
- Does IPD work in practice in all level of supply chain?
- To create IPD-culture, something is needed
- How to apply IPD in FTIA
- Why coaching is needed
What does the Finnish Transport Infrastructure Agency (FTIA) do?

- **We focus** on designing, constructing and maintaining road, rail, and maritime transport routes, arranging winter navigation, as well as on coordinating transport and land use.

- **We strive** to ensure that transport networks meet the needs of our citizens and businesses alike – promoting Finland’s competitive edge.

- **FTIA** - in cooperation with the ELY Centres - operates as the primary partner of regional councils, municipalities, urban regions, and other operators in the planning of transport systems.

- **FTIA** is also responsible for **organising traffic management according to a service agreement with Traffic Management Finland (TMF).**

- **FTIA** operates responsibly by limiting environmental damage.

- **FTIA** is an expert **procurement organisation.**
Infrastructure provides a platform for growth

- Infrastructure assets: €20 billion
- Current spending on ongoing projects: €2.6 billion
- Maintenance backlog of traffic network: €2.6 billion
- Annual budget: approximately €2.0 billion
- FTIA personnel, permanent experts: 400
- Number of people the FTIA employs indirectly through projects: 13,500

6.6.2019
Ongoing Major Investment Projects in 2019

**Road projects**
1. Park-and-ride parking at the West Metro extension
2. Ring Road I at Laajalahti
3. Main Road 12 Tiihola-Keltti
4. Main Road 12, Lahti Southern Ring Road
5. Main Road 5 Mikkeli–Juva
6. Main Road 4 Kirri–Tikkakoski
7. Road connections to the bio-product mill in Äänekoski
8. Main Road 3 Tampere-Vaasa, at Lahti, 1st phase
9. Fixed connection to Hailuoto
10. Main Road 4 Oulu–Kemi

Road projects in basic transport infrastructure management
11. Road 132, Klaukkala bypass
12. E18 Turku Ring Road
13. Road 438, New Bridge will replace road ferry in Vekaransalmi

**Railway projects**
14. Helsinki railway yard
15. Western track in Central Pasila
16. Helsinki–Riihimäki, increased capacity, 1st phase
17. Luumäki–Imatra
18. Electrification of the Turku–Usikaupunki line section
19. Electrification of the Pori–Mäntyluoto line section

**Waterway projects**
20. Vuosaari channel
21. Realignment of Savonlinna deep channel
22. Kokkola channel
23. Oulu channel

New Government will prepare 12-Year Transport plan for 2020-31 - Focus on Railway projects and basic projects
FTIA Strategic Targets to use Lean & IPD

- To improve productivity of the entire industry
- To change the culture into a more open and trusting way of working
- To improve the customer satisfaction for end products – faster, better quality and cheaper
- To develop innovativeness and knowledge

We do believe there is huge potential, which is connected to the way of acquiring services and cooperating during the project
Supply Chain in Public Sector Projects

Many parties and a lot of interfaces
Contractors and Consultants estimate FTIA every year since 2010

The most development areas to improve productivity in FTIA:
• The sharing of risks and benefits in contracts
• The selection criteria, which are encouraging contractors to develop their expertise and innovations

- Procurement capability: 69
- Network skills: 81
- Partnership skills: 75

We are not yet in top level
This year we let Subcontractors estimate the General Contractors

Procurement capability: 49
Network skills: 61
Partnership skills: 54

We have something to do in the whole supply chain ...

The few of the most development areas between General Contractor & Supply Chain:
• The contracts include mechanism, which encourage to joint goals
• We have enough possibilities to innovate solutions, which lead better product
• The view of our co-operation is long enough to develop our business
Lean thinking in IPD projects - do we also use the skills of our subcontractors?

- Last planner System through the supply chain
- **Caves/BIM/VDC** (CAVE = Computer assisted virtual environment)
- Big room environments
- Target Value Design/Delivery
- Problem solving tools and methods
- Continues improvement
- Prefabrication
- A3 reporting
- Takt time production has also started
A New Beginning to an Old Story – Rauma Marine Constructions

In cooperation with its extensive network of partners, Rauma Marine Constructions advances the Finnish marine industry and continues the traditions of shipbuilding in Rauma.

An successful example of how suppliers can be involved in the whole construction process !!!

Source: https://rmcfinland.fi/about/rauma-shipyard/
If you want a change, you need somebody to kick it off!!!
Brave organizations and people are needed to create IPD-culture.
Don’t forget the dialogue with the participants in the process!
Group project 2017-2019 for Owners

2014-16 Project level
- IPT
- Foundation
  - 11 Public organizations
  - 11 Pilot Projects
  - IPD Procurement
  - IPD Agreements and commercial models
  - IPD phases
  - Lean principles and some tools

2017-19 Organization level
- IPT²
- Producing value and improving productivity
  - 13 Public Organization
  - 13 Projects
  - Building new culture
  - Challenging and educating people
  - Lean processes and tools
  - Creating value and reducing waste

2020 - Industry level
- KIRA #1
- #1 in Using Integrated Projects
  - New strategies
  - New business models and opportunities
  - Focus to operational and lifecycle value
  - Something we have not seen yet
Examples how to apply IPD in FTIA
Design – Build with development phase - DBd

Process & Objectives

- All design material in advance in project portal – free to load everyone interested to bid
- Workshops for contractors and designers to give feedback to owner
- Information from Service providers about risks
- Owner takes risks from amounts of design
- Fixed fee & Unit prices

After selection

- The owner and the contractor start development phase jointly
- Kick Off event and development schedule
- Goal is meet exact costs and recognize all risks of cost
- Agreement of risk sharing (owner or contractor risks)
- Decision of realization option
- Construction starts as a normal DB-project
New contract model for Winter Maintenance

• More weight on quality in awarding criteria in bidding process
• Contractors’ bid will be target-price. Payment during the contracting period will be based on real costs of work done
• Subcontracting with actual prices (transparency, ”open book”)

• Contractors will submit promises on various performance and quality criteria – these criteria are developed to enhance quality and meeting with the objectives
• Quality control is ”built-in” the process of daily maintenance
• Production of effectiveness and quality – main responsibility still on contractor
• Incentives and sanctions still possible but further developed
• Open book for costs
Focus on people, challenge and educate them
Not the best players - but The Best Team!
Not the best players but the best Team...

- The RIL Project of the Year in Finland 2016
- The IPMA Project of the Year in Finland 2017
- The IPMA Global Project of the Year 2018
Nothing teaches us better than our own experiences!