

PSS (Product Service System) WG



Current status and outlook
February 2024

The Industrial Ontologies Foundry
Part of the Open Applications Group



PSS: Product Service System

Product Service System in a nutshell

PSS ontology main entities

PSS status

OAS Ontology – some application examples

PSS outlook

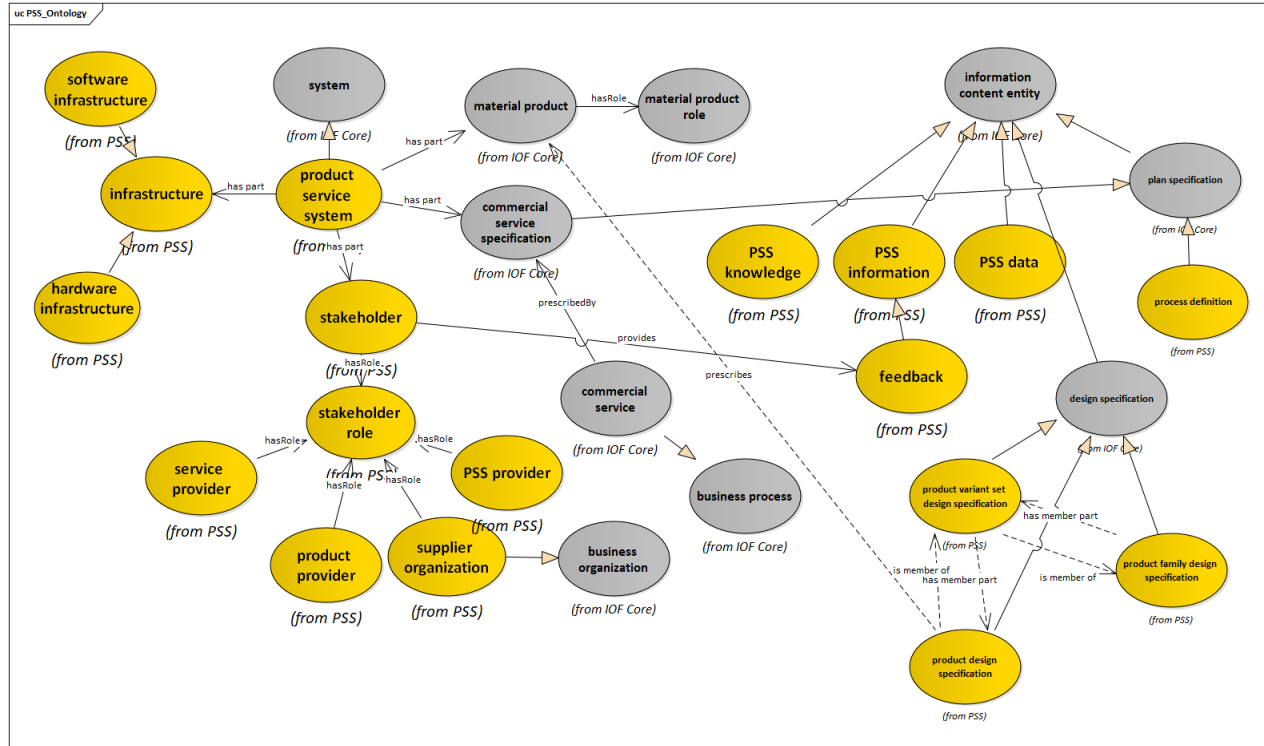
PSS wg in a nutshell

Goals and scope of the working group: what is a PSS?

- ▶ A PSS is system that aims to satisfy a need of the market (e.g. to be sold in order to provide profit and support customers by covering their needs), to be competitive, and jointly fulfil customer's needs

PSS is a system which includes at least one product and at least one service, related to this product, and may include stakeholders and infrastructure

PSS ontology main entities



- Over 70 entities in PSS ontology
- 2 object properties

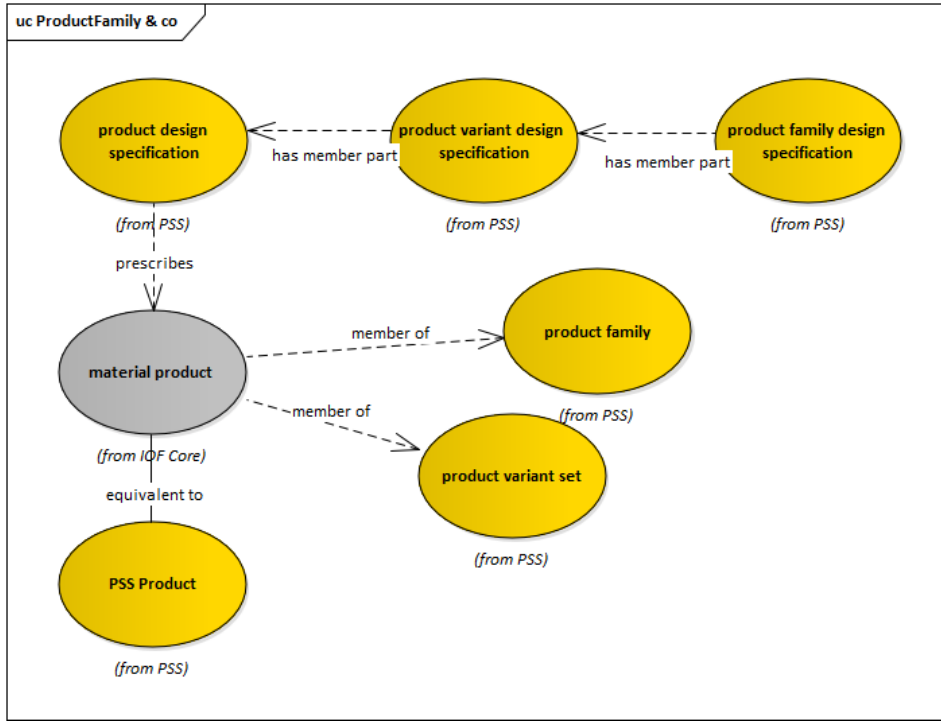
► IOF members can see this here

<https://oagiscore.atlassian.net/wiki/spaces/IOF/pages/4228513800/PSS+WG+Top-Level+Domain+Terms+and+Relations>

PSS status

Topics discussed in the last few months (I)

► Product Family & Product Variant Set



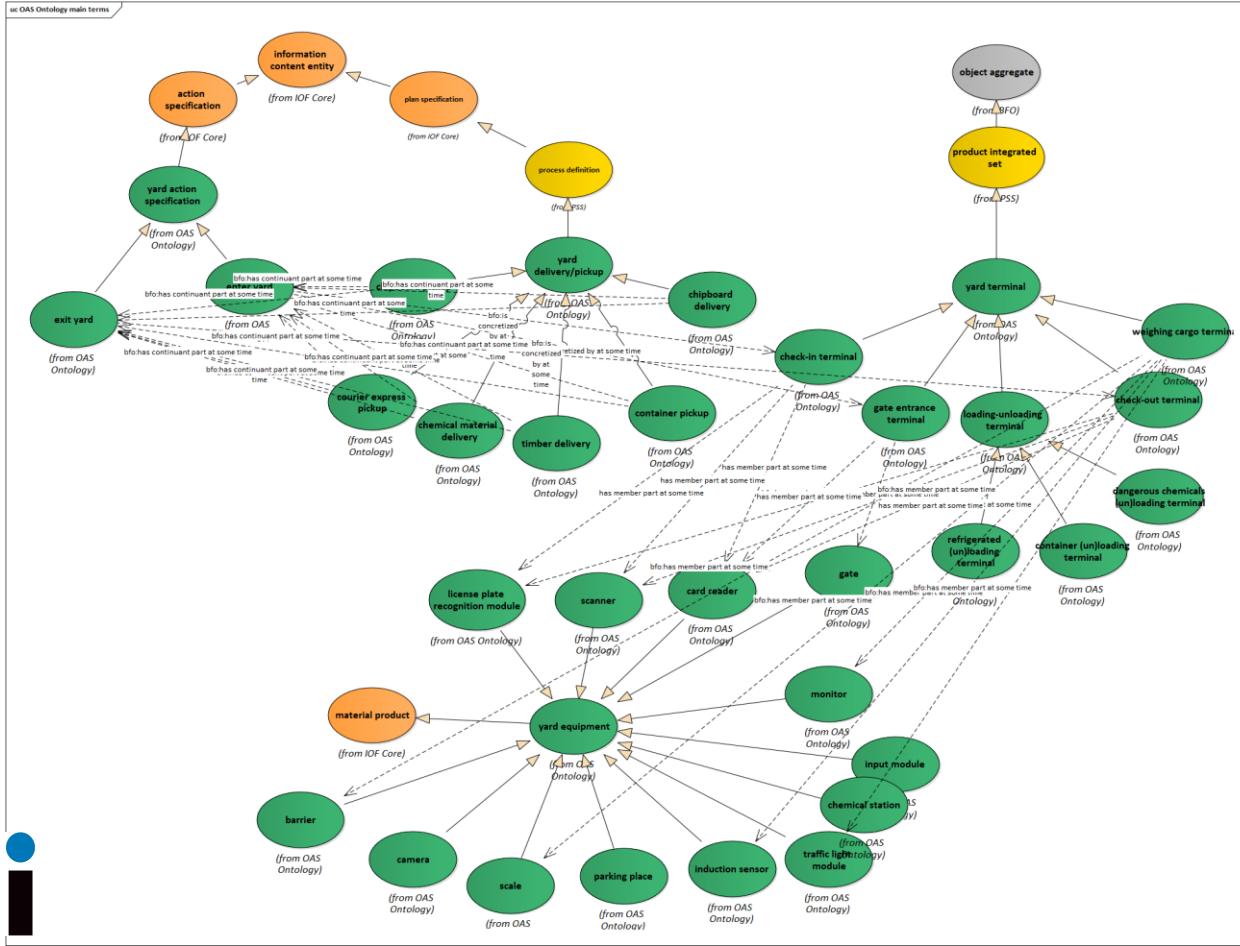
PSS status

- ▶ Use the PSS ontology in an OntoCommons demonstrator – OAS
 - ▷ Solving standardization problem - support the yard site setup with wizard tool that uses application specific OAS ontology as input and outputs a standardised machine-readable technical specification file
 - ▷ Design, setup, configuration of yard systems
 - ▷ Currently using PSS ontology to model their “world” (starting from existing taxonomies) and building a set of rules to support the demonstrator activities in a new yard setup project (starting from domain experts experience and existing yard designs).
 - ▷ *Show demonstrator video (next slide or youtube link tbd)*

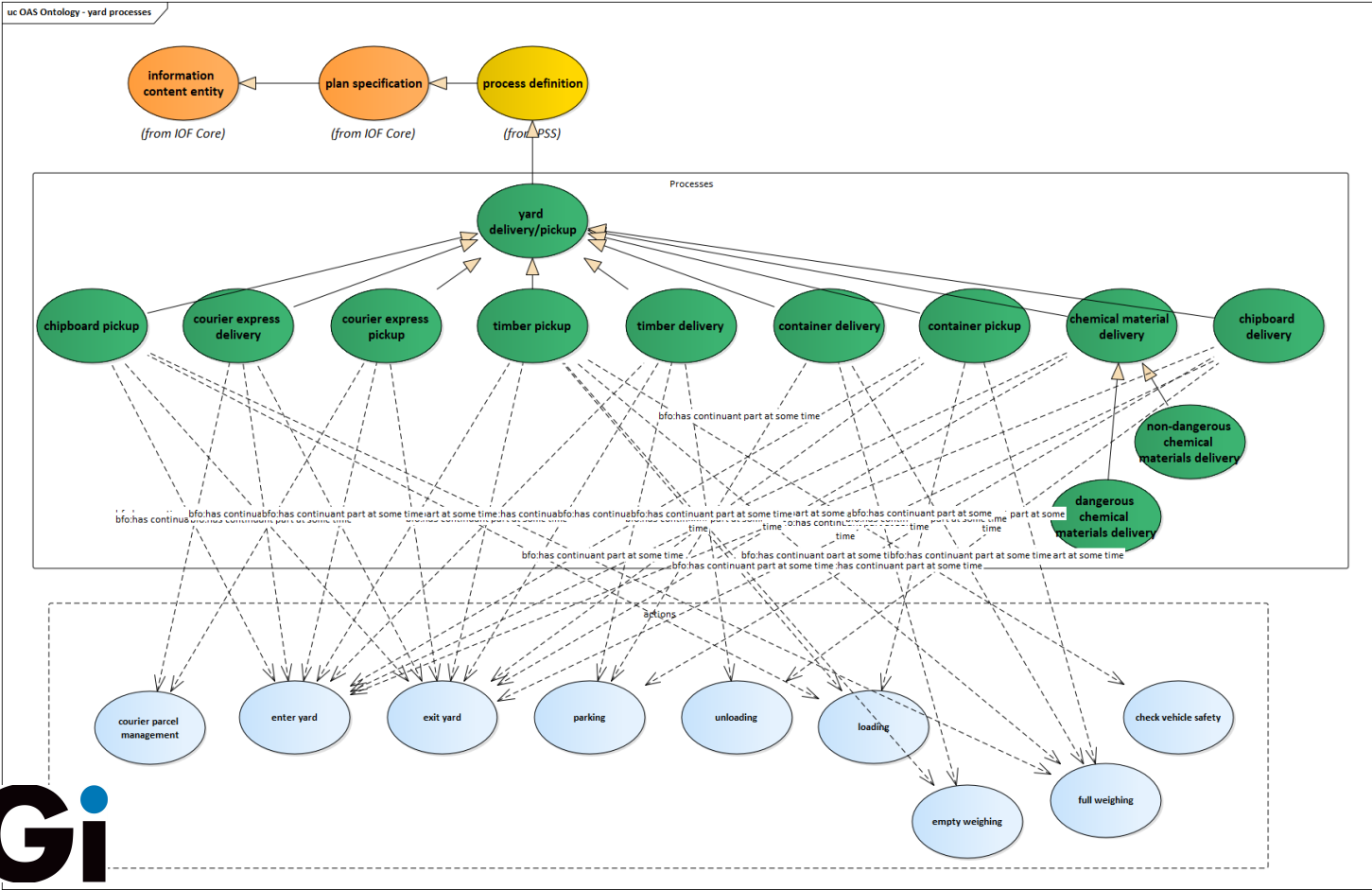
PSS status

▷ *Youtube link to demonstration video tbd soon*

OAS ontology main terms (a part of...)

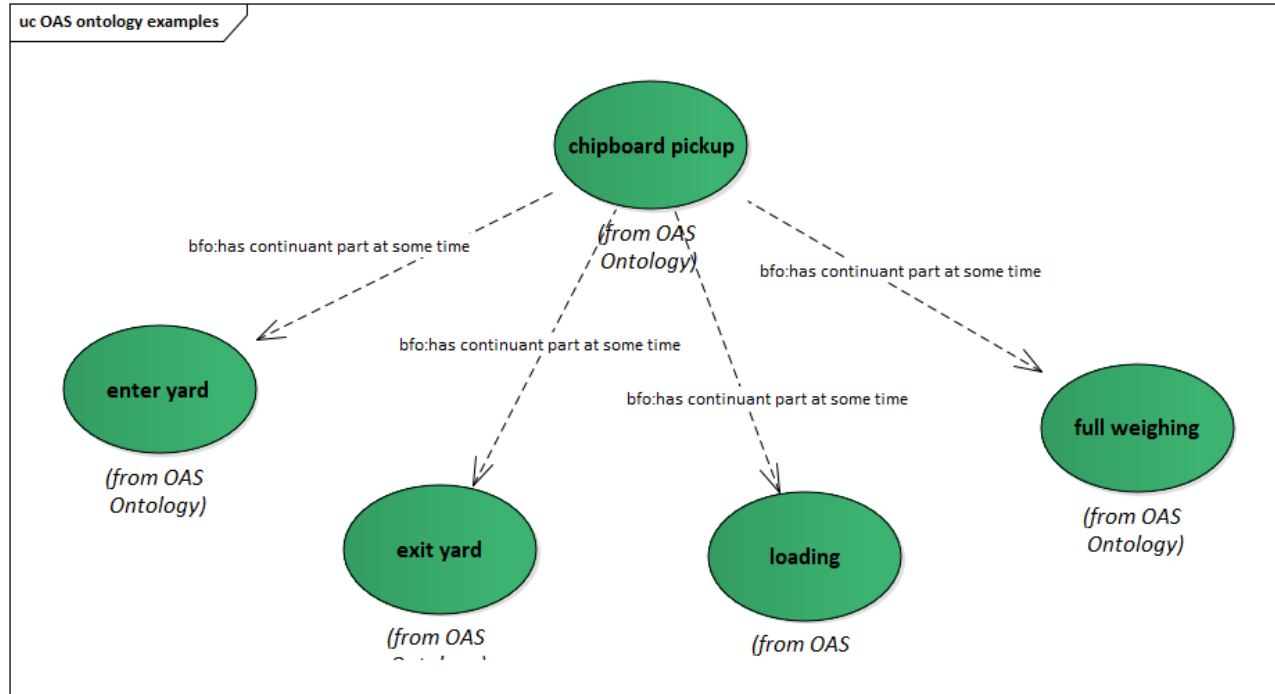


OAS ontology: yard processes – yard action specification



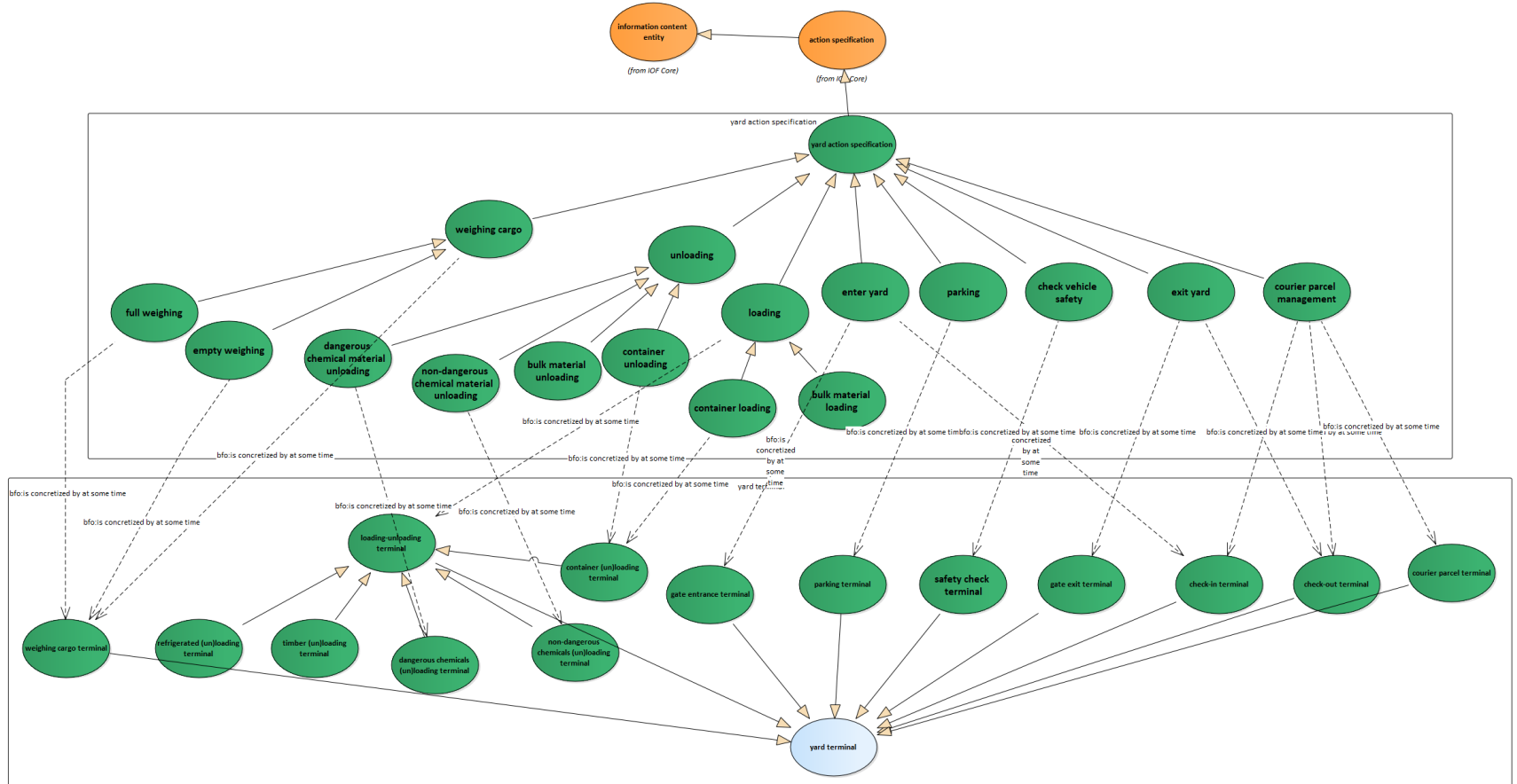
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OAS ontology: yard processes – yard action specification



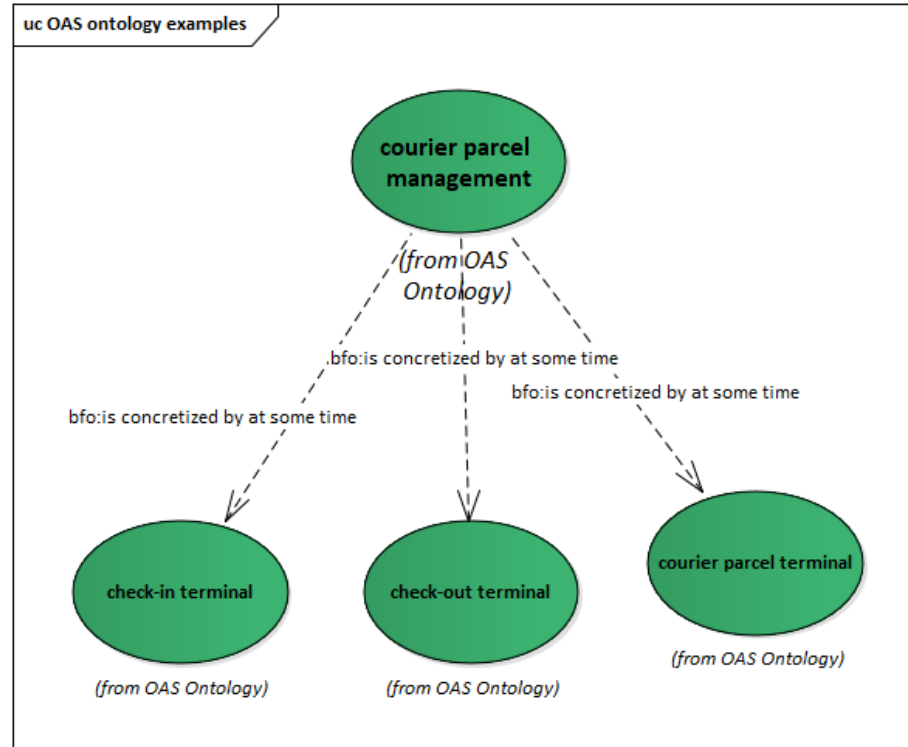
OAS ontology: yard actions – yard terminals

uc OAS Ontology - yard actions



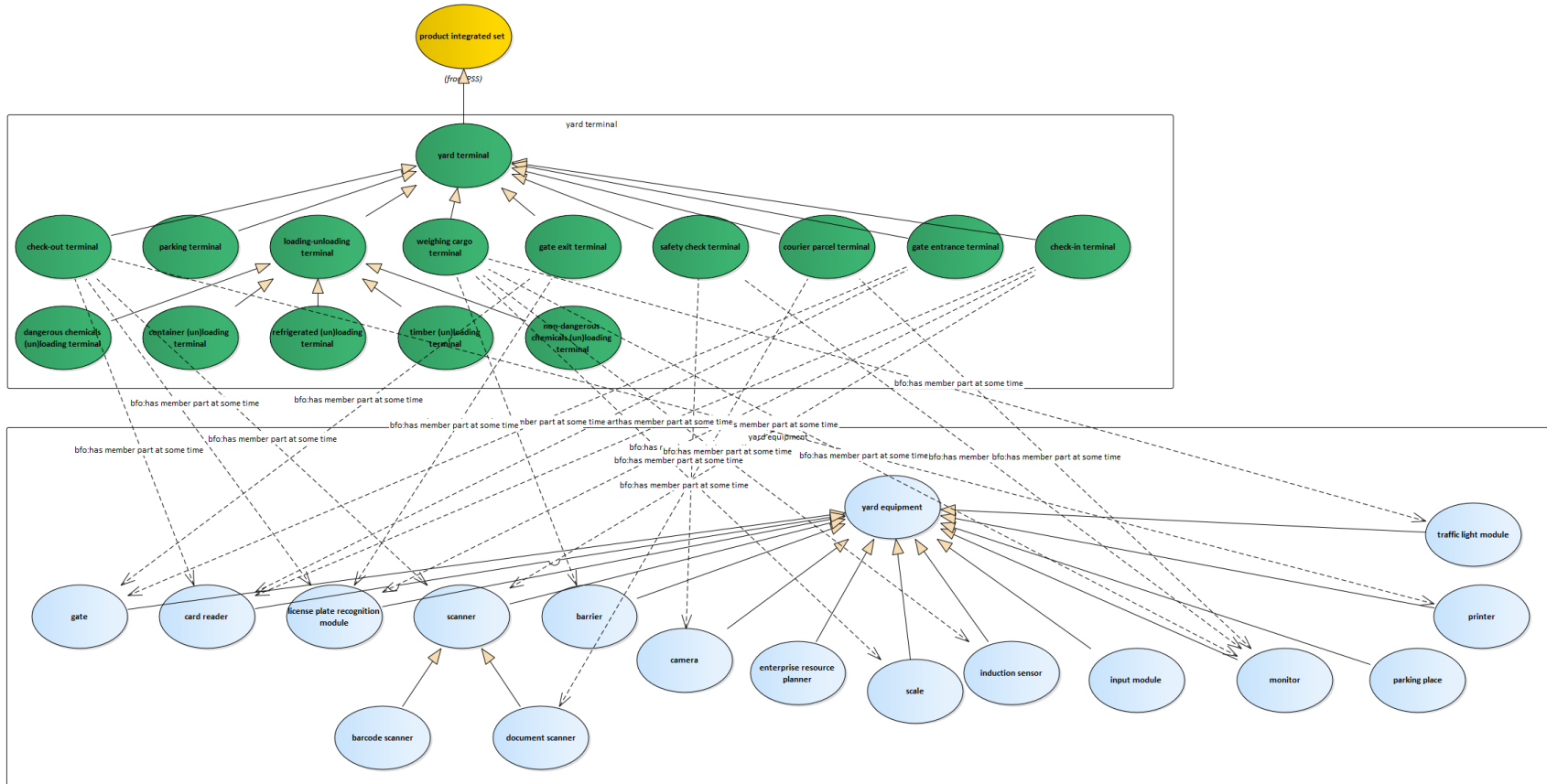
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OAS ontology: yard actions – yard terminals

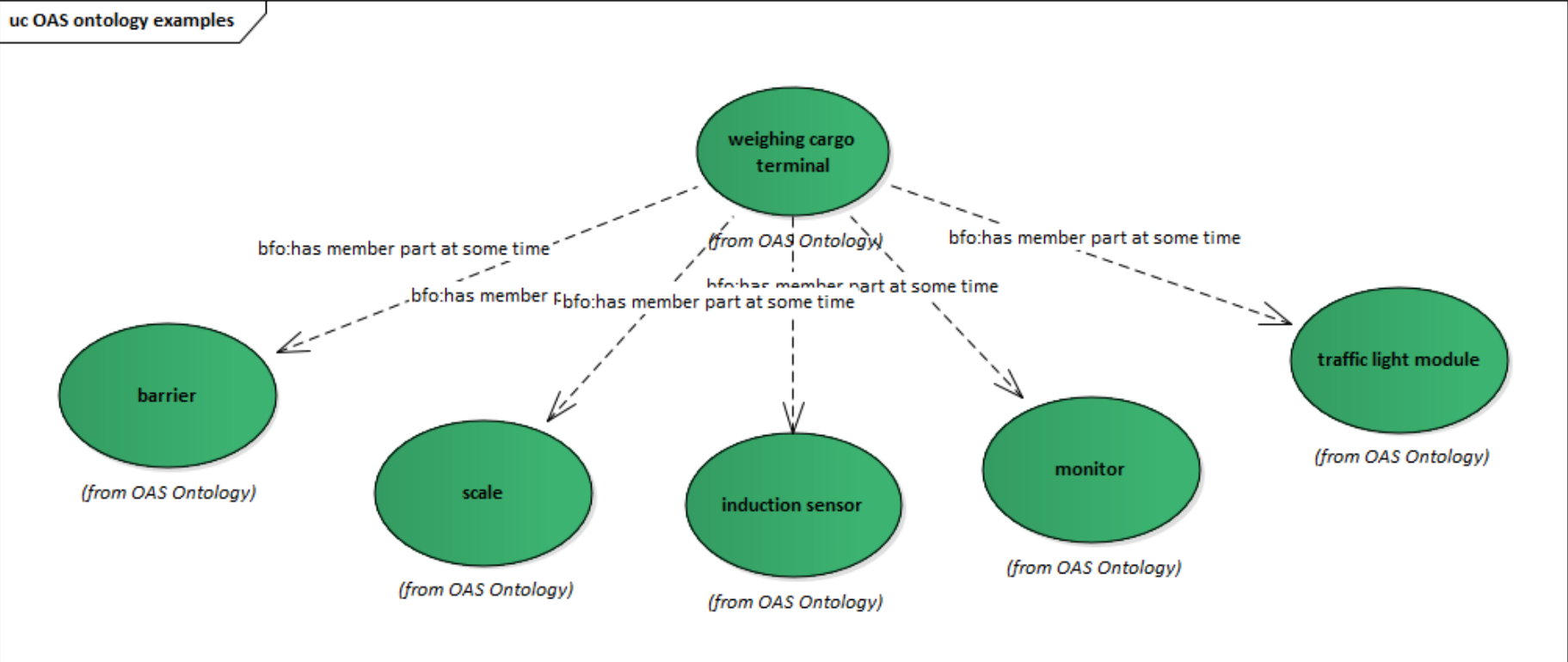


OAS ontology: yard terminals & yard equipment

uc OAS Ontology - terminals



OAS ontology: yard terminals & yard equipment



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PSS outlook

- ▶ AI4Work pilot will continue the work done in OntoCommons extending the OAS Ontology by using the Supply Chain reference ontology and Product Planning and Scheduling ontology by continuing modeling the OAS and customer related entities and by applying reasoners to support the **yard systems' management**
- ▶ We need to work on coordination between IOF ontologies on commonly used terms. E.g.
 - ▷ *facility* in Supply Chain vs. *hardware infrastructure* in PSS ontology
 - ▷ ...
- ▶ Continue working on the PSS OWL file taking IOFCore and annotation guidelines into account
 - ▷ we need help from an ontologist to create some of the axioms and the needed necessary and sufficient conditions

Questions?

Product Service System working group meeting every 2 weeks on Wednesdays
16:00 CET / 10:00 EST / 12:00 ART (next meeting 21.02.2024)

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<https://oagi.org/pages/Production-Service-System-Working-Group>

<https://oagiscore.atlassian.net/wiki/spaces/IOF/pages/3415015463/PSS+Product+Service+System+WG>