Lithium-ion batteries: Standard overview

Lithium-ion Battery Safety Methodology

Authors:
Michiel Wellens – Flanders' DRIVE
Suzanne Van Poppel – Flanders' DRIVE

Date:
23/09/2014

Version:
0.1

Revision	Date	Description of the modification	Author
0.1	23/09/2014	First draft	Suzanne Van Poppel
1.0	23/9/2014	Review and First version	Michiel Wellens

Table of contents

Table of figures

1. Introduction

To set up the database of the standard information, a selection of standards concerning battery safety, performance testing, safety testing and safety requirements for Lithium-ion batteries battery needs to be made.

This selection should contain the most important standards, standards which give background info and requirements for others, standards applicable in the different regions. To make this selection as complete as possible the following exercise was done in the Li-SAFE project:

- Start with the most important standards concerning Lithium-ion batteries
- Verify to which standards they refer in the normative references and how these are used. For example: standard A refers to a measurement procedure of standard B, thus to follow standard A completely, standard B must be taken into account and added in the database.
- Repeat this for every new identified standards

The result of this exercise is given in this document. The references are graphically represented in EA-diagram. The diagrams give a good overview of the standard information added in the database and how standards are referring to each other.

2. Overview meshes of the different standard organization

The standards of the following organizations were investigated:

- IEC
- IEEE
- ISO
- EN and UN
- SAE
- UL
- JIS
- NEMA
- Group of other standards from FreedomCAR, USABC, BATSO, …

The EA-model with the original meshes is placed on subversion in following tag:
https://svn.flandersdrive.be/svn/Li-SAFE_Methodology/tags/TM_20140506

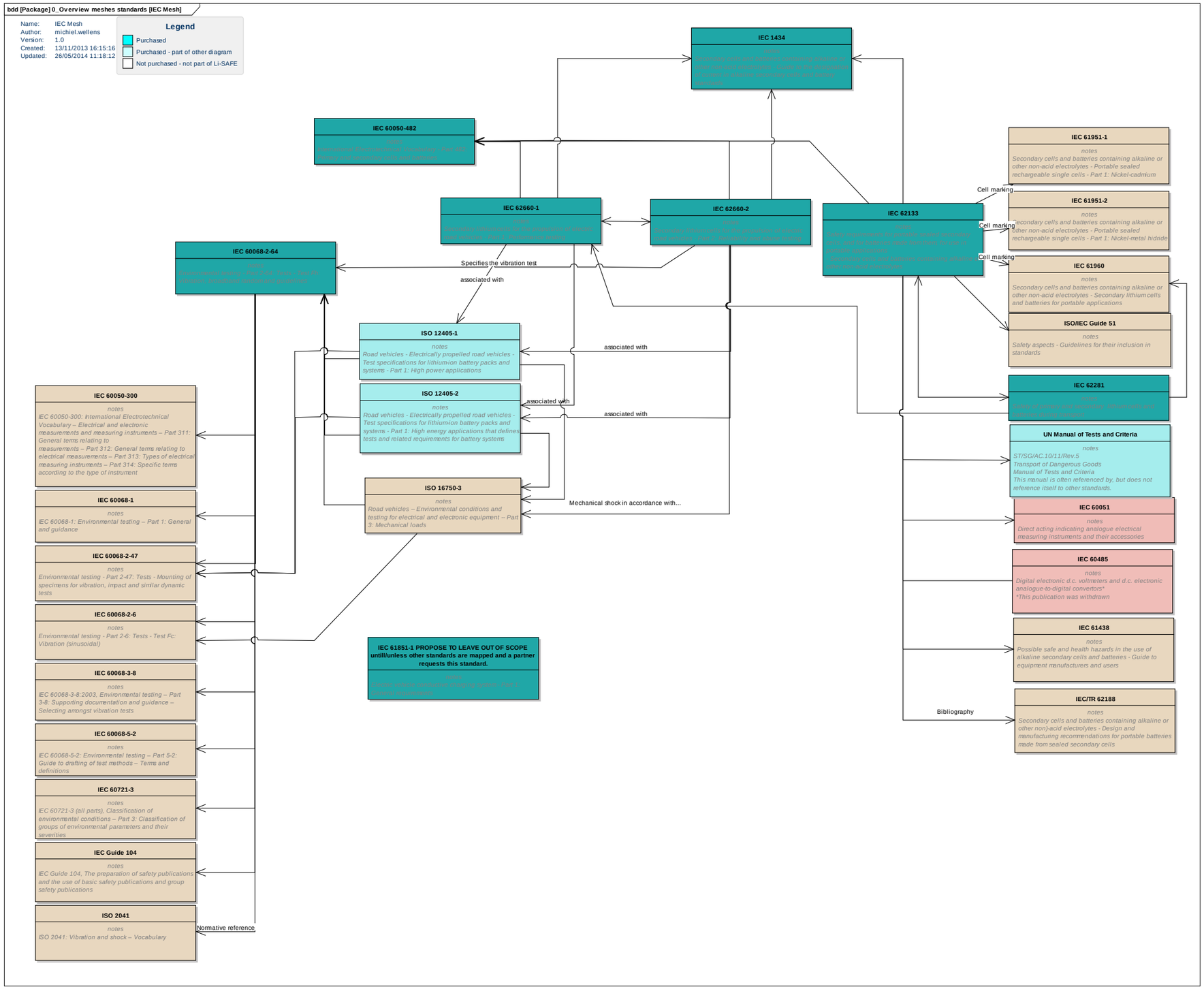

Figure 1: IEC overview

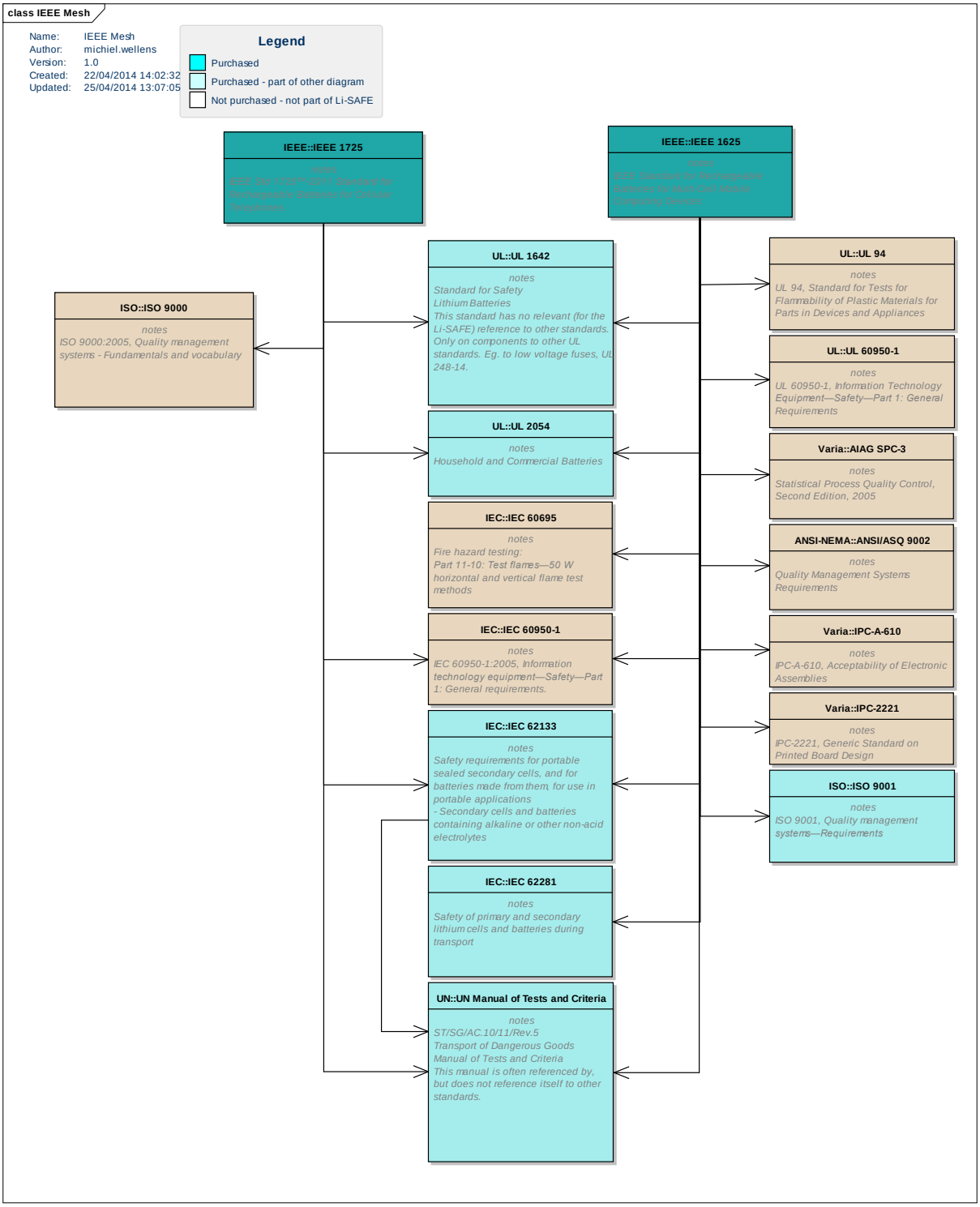

Figure 2: IEEE overview

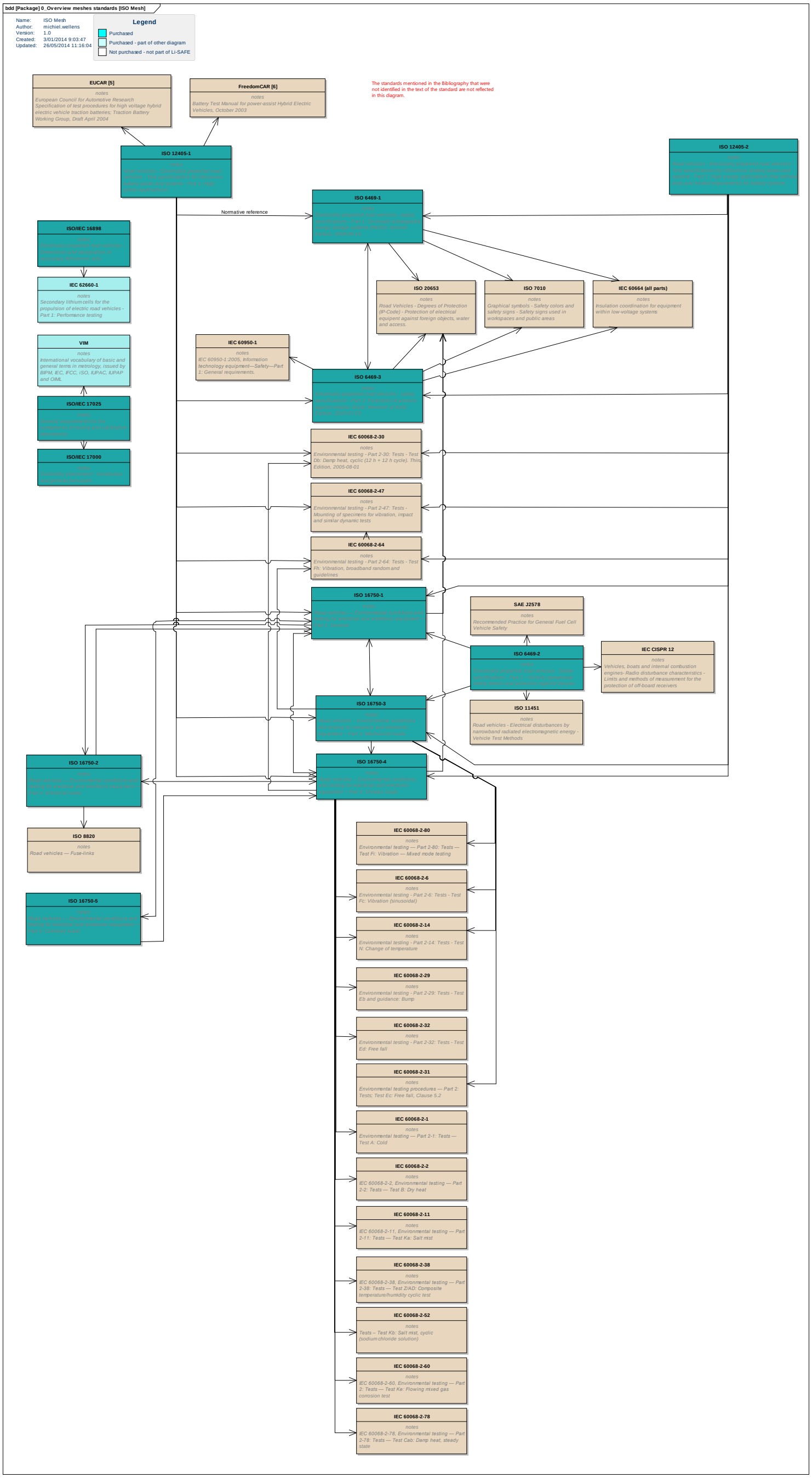

Figure 3: ISO overview

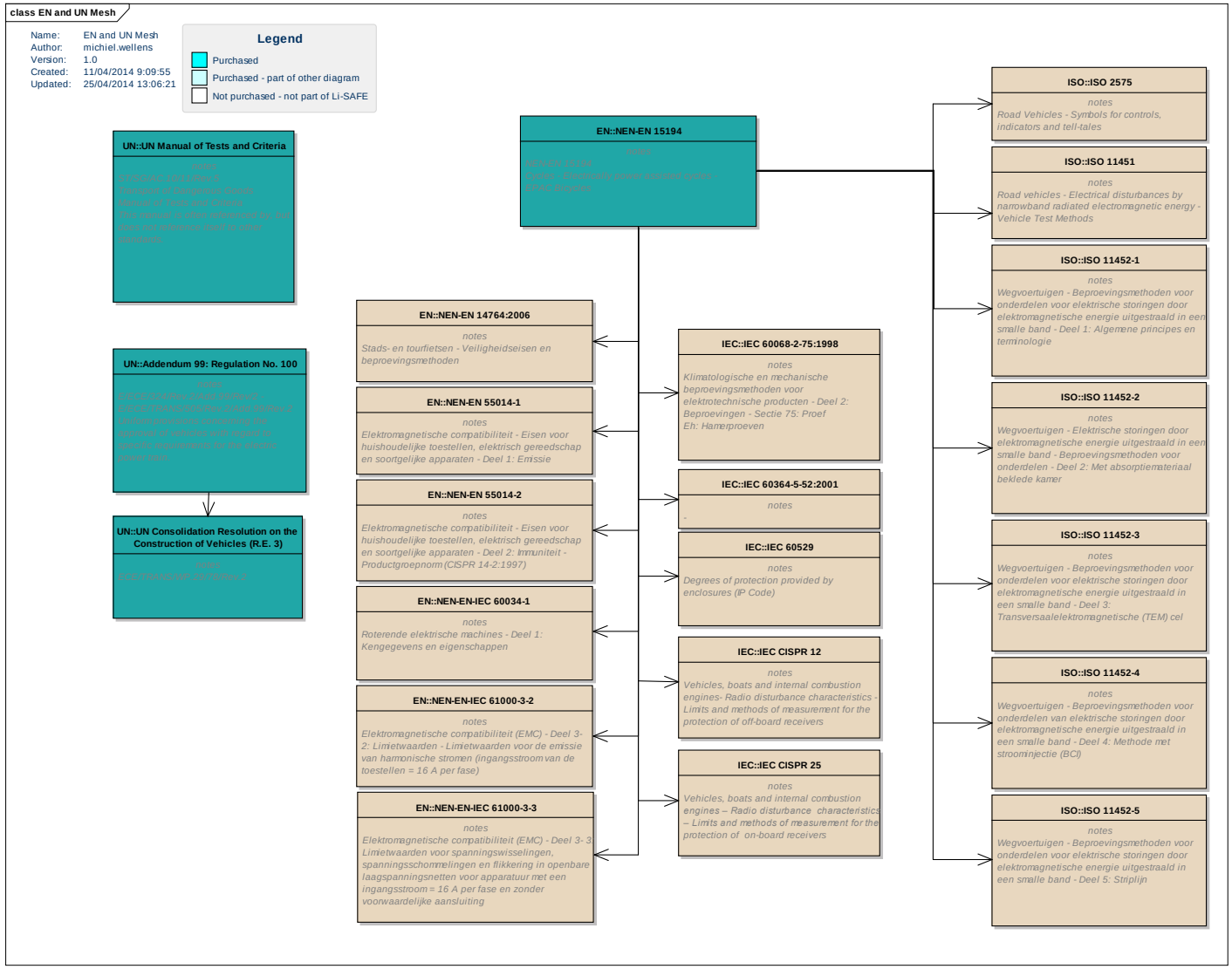

Figure 4: EN and UN overview

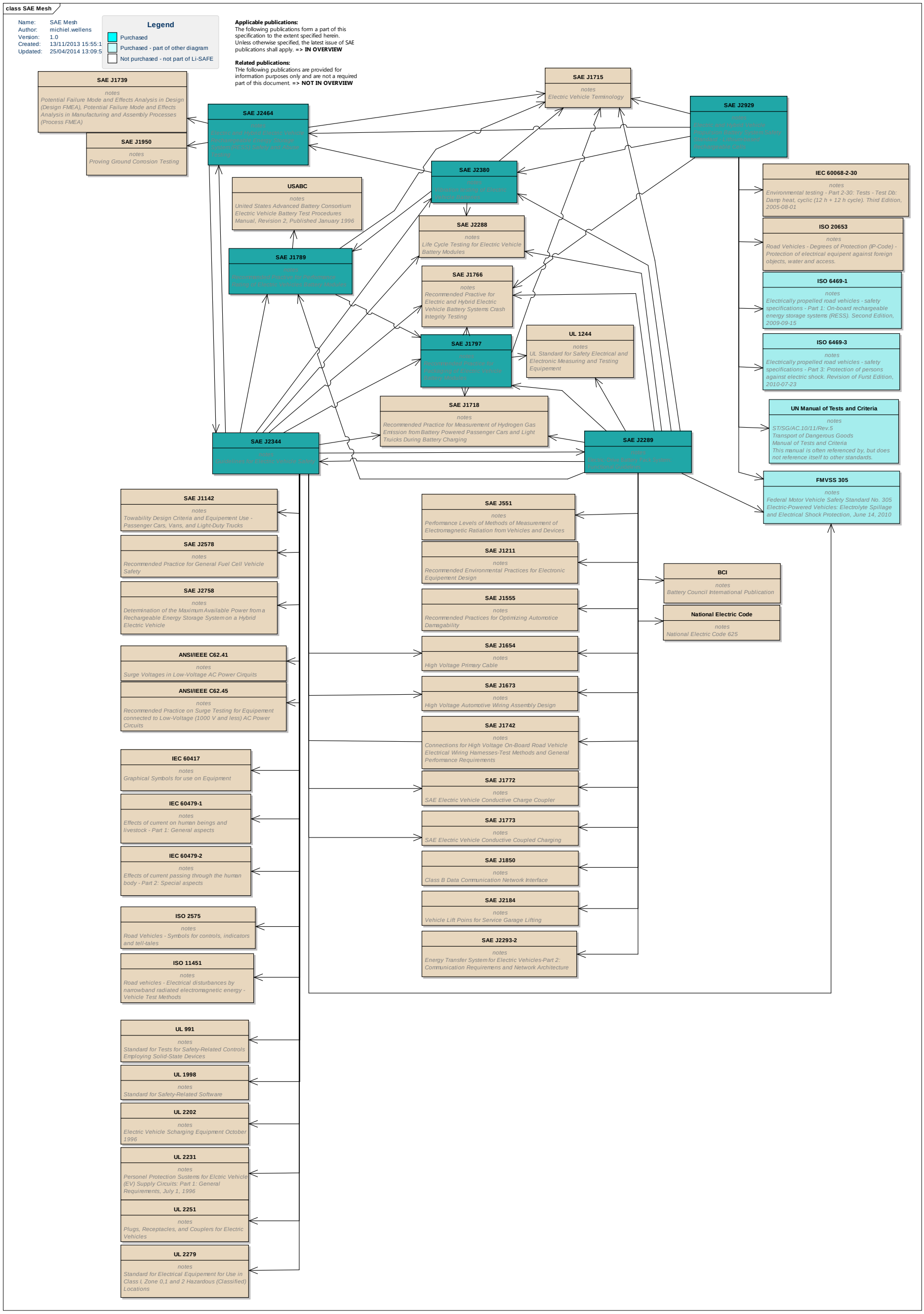

Figure 5: SAE overview

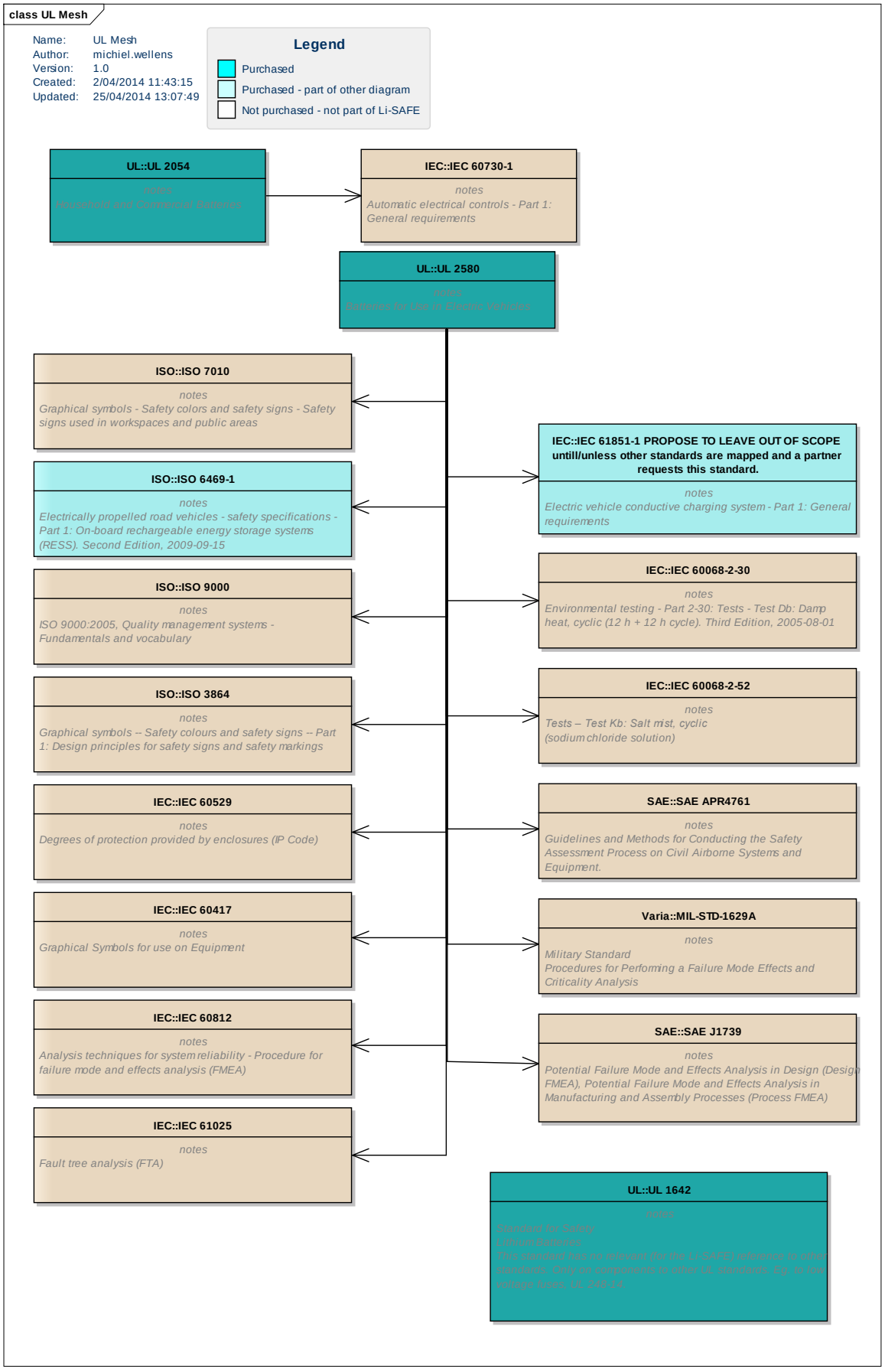

Figure 6: UL overview

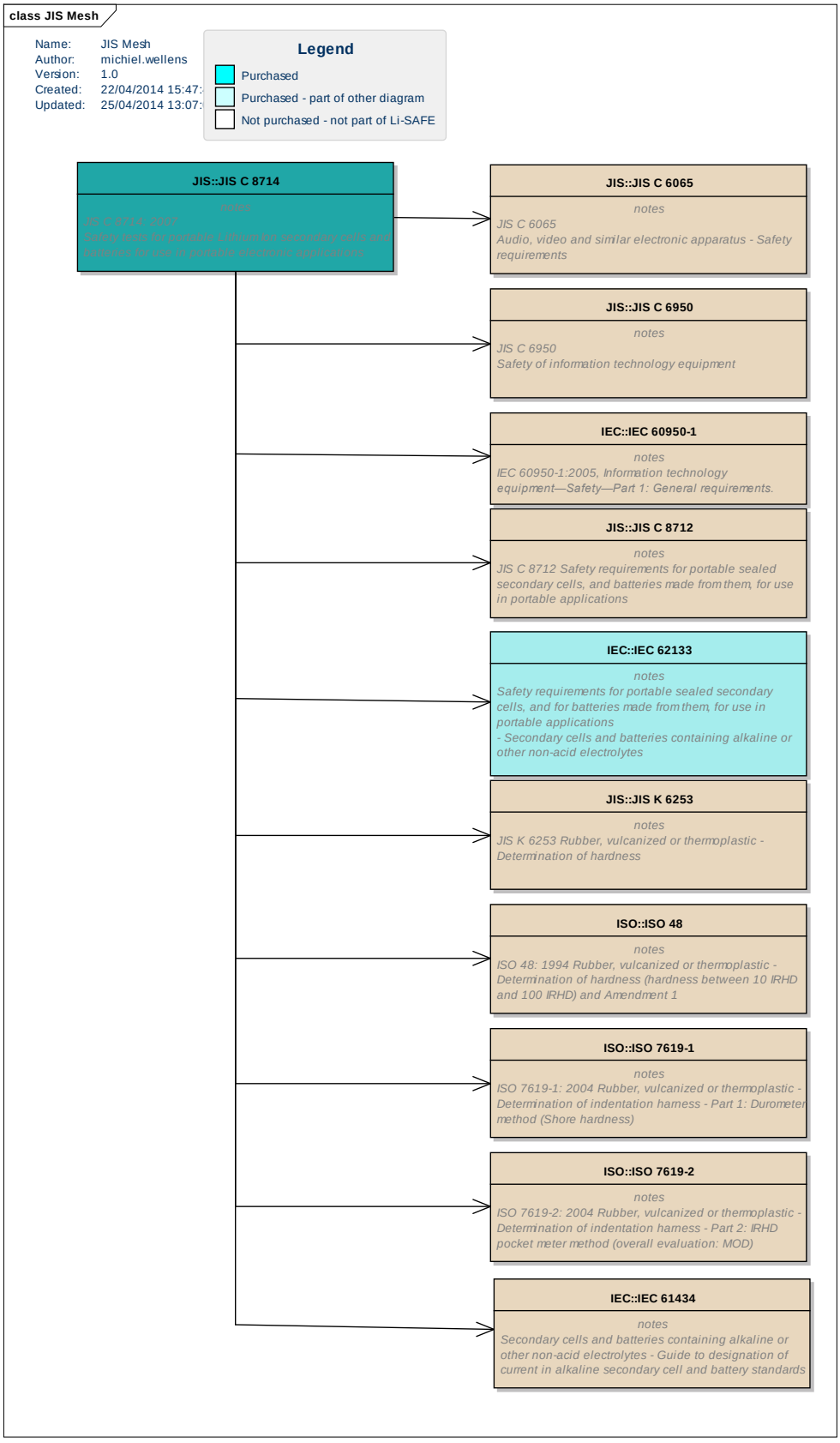

Figure 7: JIS overview

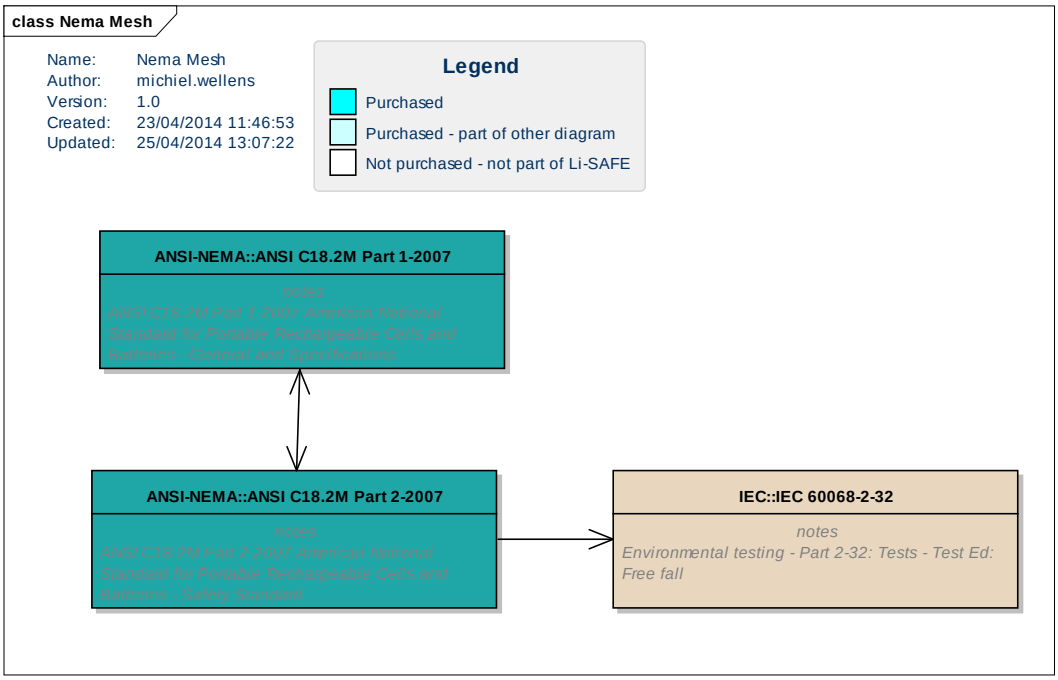

Figure 8: Nema overview

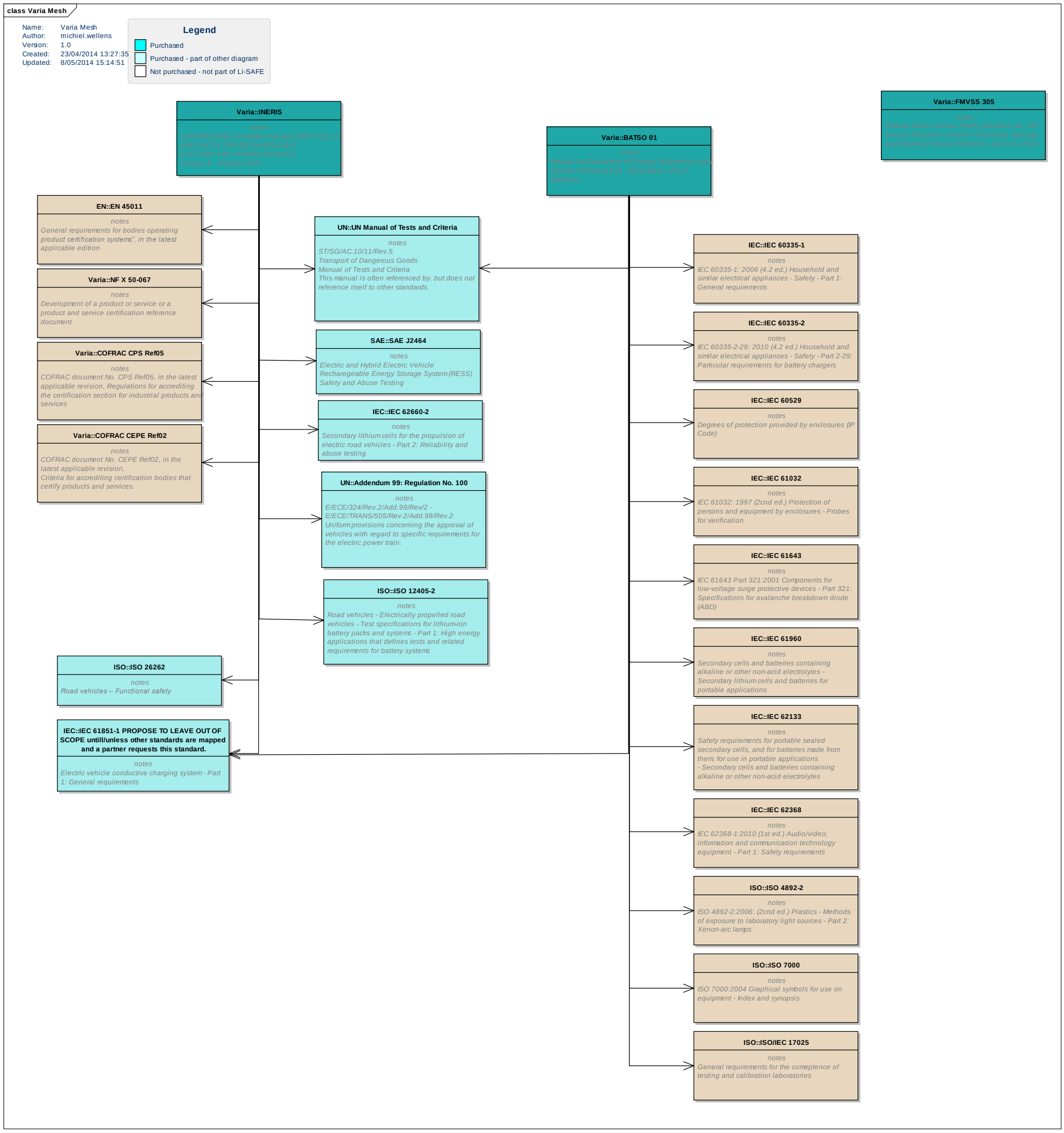

Figure 9: Varia overview