What We Mean by Collaborative Engineering Management

Collaborative Engineering Management

We use the term *Collaborative Engineering Management* in a good deal of our printed material.

To the best of our knowledge this is not a term that is regularly used in industry and we certainly do not intend to introduce a new buzz-phrase – there are far too many of them already. Rather, we hope that it is almost self-explanatory, but a little explanation may be in order.

We use the phrase as a generic term to describe modern structured engineering methodologies that have systems engineering activities as part of their basis. Some of these methodologies are described below. The phrase describes our approach to systems engineering with expert personnel and appropriate tool support.

Product Life cycle Management (PLM) is an all-encompassing approach for innovation, new product development and introduction, and product information from inception to end of life [3].

Application Life cycle Management (ALM) defines the rules of the road for the entire software and systems life cycle. Successful ALM provides clarity around the entire delivery effort, from defining requirements to building, packaging, and deploying the code [4].

IBM® Engineering Lifecycle Management (ELM) is used to coordinate software and systems activities across the development life cycle.

Agile Project Management is a style of project management that focuses on early delivery of business value, continuous improvement of the project's product and processes, flexibility of scope, team input, and delivering well-tested products that reflect customer needs [6].

What is a system?

A system is a combination of interacting elements organised to achieve one or more stated purposes.
As defined in ISO/IEC/IEEE 15288 [1].

An element is any identifiable entity.
As defined by Kuhn [2].

What is systems engineering?

Systems Engineering is an interdisciplinary approach governing the total technical and managerial effort required to transform a set of stakeholder needs, expectations, and constraints into a solution and to support that solution.
As defined in ISO/IEC/IEEE 15288 [1].

Integrated Product Development (IPD) recognises the need to consider all elements of the product life cycle, from conception through disposal starting at the beginning of the life cycle [7].

Concurrent Engineering was introduced by IBM® in 2014 as an enterprise capability to develop sophisticated electronic products that are expected to empower Internet of Things makers [9].

References:

[1] "Systems and Software Engineering – System Life Cycle Processes", ISO/IEC/IEEE 15288, 15 May 2015.
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[3] www.plmtechnologyguide.com, retrieved 24 August 2018.
[4] "Agile Application Lifecycle Management", Bob Aiello and Leslie Sachs, Addison-Wesley, June 2016.
[5] Wikipedia, retrieved 24 August 2018.
[6] "Agile Project Management for Dummies", Mark C Layton, John Wiley and Sons Inc., 2012
[7] "Systems Engineering Handbook", International Council On Systems Engineering, John Wiley and Sons Inc, 2015
[8] www.esa.int, retrieved 24 August 2018.
[9] www.ibmbigdatahub.com/blog/what-continuous-engineering

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