Systems Engineering Fundamentals Introduction

by Gerrit Muller TNO-ESI, University College of South-Eastern Norway
e-mail: gaudisite@gmail.com
www.gaudisite.nl

Abstract

This presentation introduces the ideas behind the course Systems Engineering Fundamentals.

Distribution

This article or presentation is written as part of the Gaudí project. The Gaudí project philosophy is to improve by obtaining frequent feedback. Frequent feedback is pursued by an open creation process. This document is published as intermediate or nearly mature version to get feedback. Further distribution is allowed as long as the document remains complete and unchanged.

September 1, 2020 status: planned version: 0



Architecture Top View





Architecting Playing Field





Simplified Systems Engineering Model

inputs

stakeholder needs business objectives



feedback

version: 0 September 1, 2020 MSIINdefinition



Level of Abstraction Single System



version: 0 September 1, 2020 RAPpyramid



From system to Product Family or Portfolio



version: 0 September 1, 2020 DRALpyramidGrowth

Product Family in Context



version: 0 September 1, 2020 RAPdiabolo



Engineering



version: 0 September 1, 2020 LAWFengineering





version: 0 September 1, 2020 LAWFdesign



Architecting

10⁹ 10⁶ 10³ some context enterprise context details are essential enterprise number of details Architecting: stakeholders 10⁰ 10³ realization and design choices in context systems 10⁶ 10⁹ multidisciplinary design some technical details are essential parts, connections, lines of code

version: 0 September 1, 2020 LAWFdiabolo

