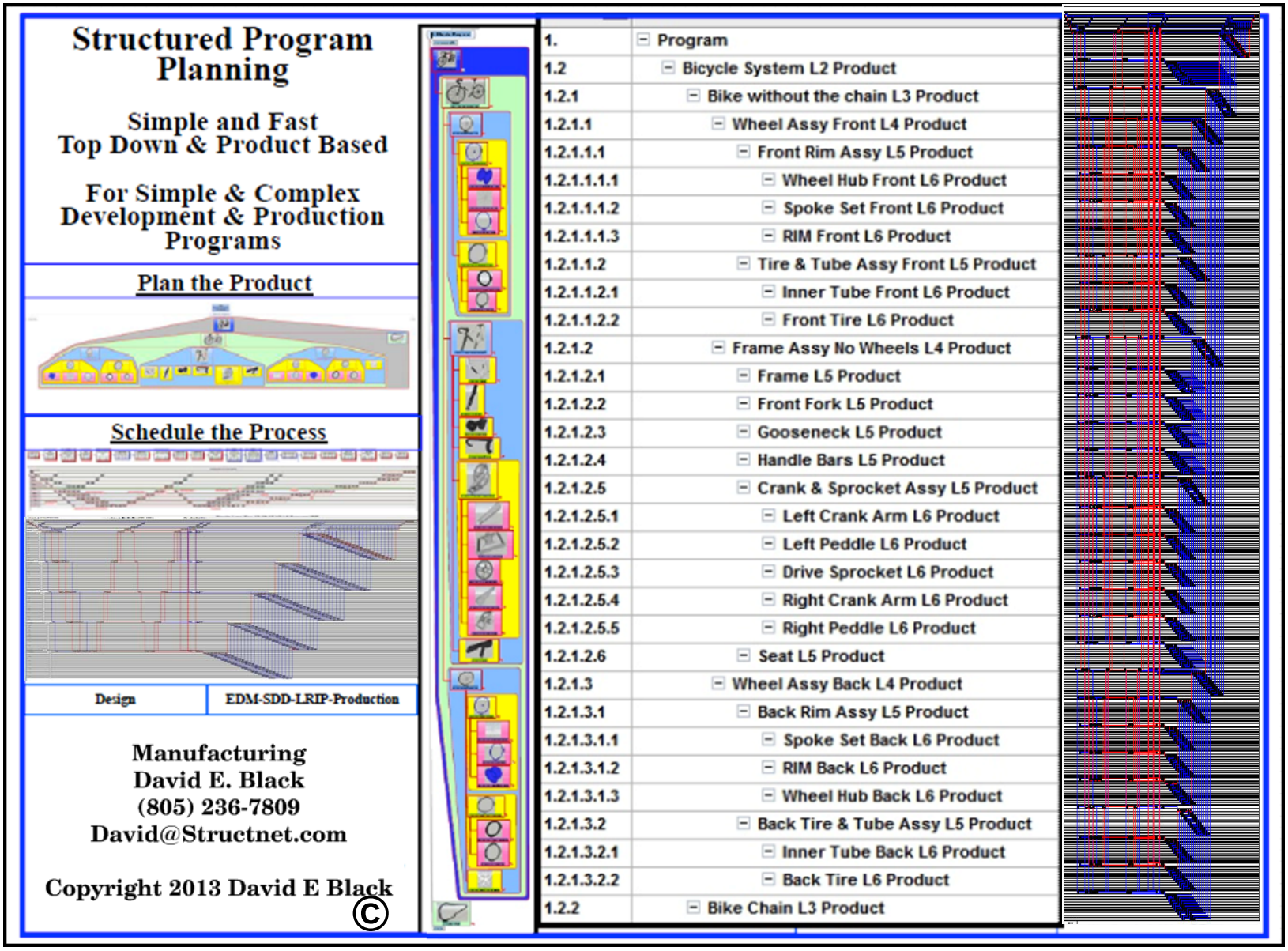
PBS Aligned with IMS



Level II IMS Task Names

Defined Process Tasks

Requirements & Architecture

1. Work Authorization Complete
2. Requirements Definition
3. Requirements Definition Review (ISRR)
4. Requirements Definition Review (ISRR) Complete
5. Architecture Definition
6. Architecture Definition Review (ISAR)
7. Architecture Definition Review (ISAR) Complete

Design

8. Initial Preliminary Design
9. Interim Preliminary Design
10. Final Preliminary Design
11. Preliminary Design Review (IPDR)
12. Preliminary Design Review (IPDR) Complete
13. Initial Detailed Design
14. Interim Detail Design
15. Final Detailed Design
16. Detailed Design Review (ICDR)
17. Detailed Design Review (ICDR) Complete

Fabrication Release, Receiving & Inspection

18. Procurement
19. Manufacturing Readiness Review Meeting
20. Parts Delivery
21. Parts Fabrication
22. Parts Delivery
23. Parts Fabrication
24. All Parts Complete
25. Inspect Parts
26. Inspect All Parts Complete

Assembly, Integration, Test, Ship

27. Assembly
28. Integration
29. Test Readiness Review (TRR) Meting
30. Test Readiness Review (TRR)
31. Test
32. Consent to Ship
33. Ship
34. Ship Complete

Create a Program IMP/IMS

Strategic Vision:

A fast and simple method of creating a Program Plan and IMP/IMS for Proposals that can be expanded at the Execution phase, follows the Enterprise process standards, is Consistent, Repeatable, Reusable, and can be easily taught and learned by all stakeholders

Strategic Plan:

A. Create Templates and Repositories.

1. Create universal Level II (Model L2) & Level III (Model L3) IMP/IMS Models that can be used for a large number of programs within the enterprise and store them in a Model Repository (MLR).
2. Create a PBS Repository (PBSR) to store examples from previous programs.

B. Retrieve, Tailor & Replicate Stored Templates

1. Retrieve Structured Schedule Model that fits the new program.
2. Create a new or retrieve a PBS from the PBSR.
3. Tailor the Model L2 to fit the program scope to the depth that will be used by the Execution Team.
4. Replicate the Model L2 to fit the program scope and PBS to create Initial IMS
5. Tailor the Initial IMS to create the Program Level II IMP/IMS (PL II IMS)

C. Gather data from Stakeholders

1. Submit the PL II IMS to the proposal team stakeholders, requesting that they add durations and resources to it.

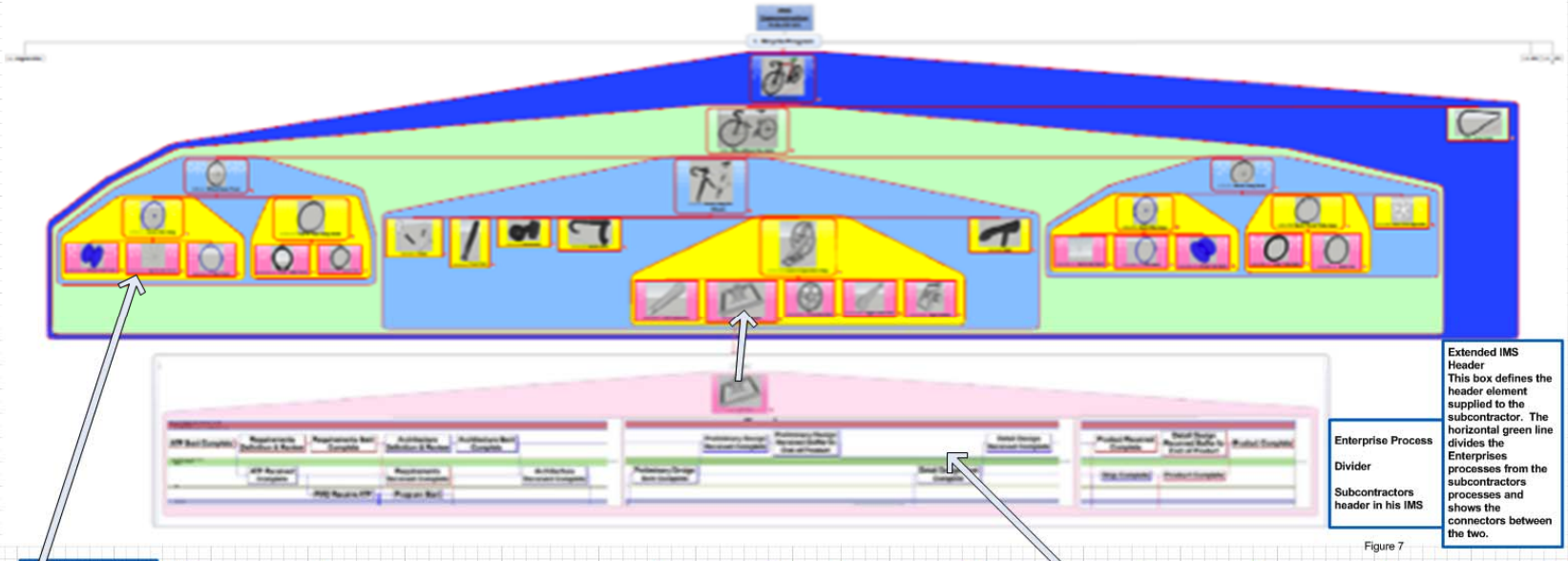
D. Analyze IMP/IMS

1. Identify the Critical Path.
2. Identify and tailor the procurement links to meet program duration requirements.
3. Run Schedule Risk Assessment (SRA) to find program duration that represents an 80% probability of completing the program on time.
4. Repeat steps B,C & D to finalize IMP/IMS.
5. Submit final IMS to the Proposal Team for inclusion in the Proposal.

E. Program Execution

1. Submit to the Program Execution Team after award.
2. Expand to meet the detailed requirements of the program using the SLT III templates.

Plan the Product



The initial Product Breakdown Structure with images gives the viewer a good idea of how the system will be Assembled, Integrated, and Tested. Discussions on the hierarchy should be agreed to in this view. Initial colors shown in the PBS indicate the level of the product in the Product Breakdown Structure.

Figure 1

Once the hierarchy is agreed to, additional attributes to the PBS may be added for clarity. Colors may be changed to indicate where the product requirements will be written, the design will be conducted, and the manufacturing will be done.

Figure 2

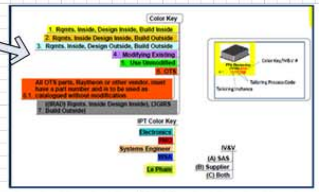


Figure 3

The Product Breakdown Structure for all products that make up the system should be shown in the PBS. The usual stopping place is the last product to be built by the performing organization. This sometimes is called the terminal element.

Figure 4

Terminal Element
The terminal element is a product or component where the majority of the detail fabrication takes place.

The program may elect to continue the PBS down to lower levels to include products or components that will be furnished by subcontractors

Figure 5

Subcontractors Product
The program may elect to extend the schedule down one or two additional levels, then hand the schedule segment to the subcontractor to use as the format for his schedule. That is not to say that the subcontractor must follow the prime's schedule throughout his IMP/IMS, but it does establish an interface between the Enterprise IMS and the subcontractors IMS.

Figure 6

Enterprise Process

Divider

Subcontractors header in his IMS

Figure 7

Terminal Element Extension
The terminal element may be extended to a Level III process. In this example the Peddle has been given an extended header. This header includes the same processes that are in the IMP/IMS. (See Schedule the Process for further explanation.

Figure 8

Non-Terminal Element
The non-terminal element is a product that exists between the terminal elements and the System. Each product requires work to be done on Requirements Definition, Architecture Definition, Preliminary Design and reviews, Detail Design and reviews, Procurement, Fabrication, Assembly, Integration, Test and Ship to the next higher level of indenture.

Figure 9

Extended IMS Header
This box defines the header element supplied to the subcontractor. The horizontal green line divides the Enterprises processes from the subcontractors processes and shows the connectors between the two.

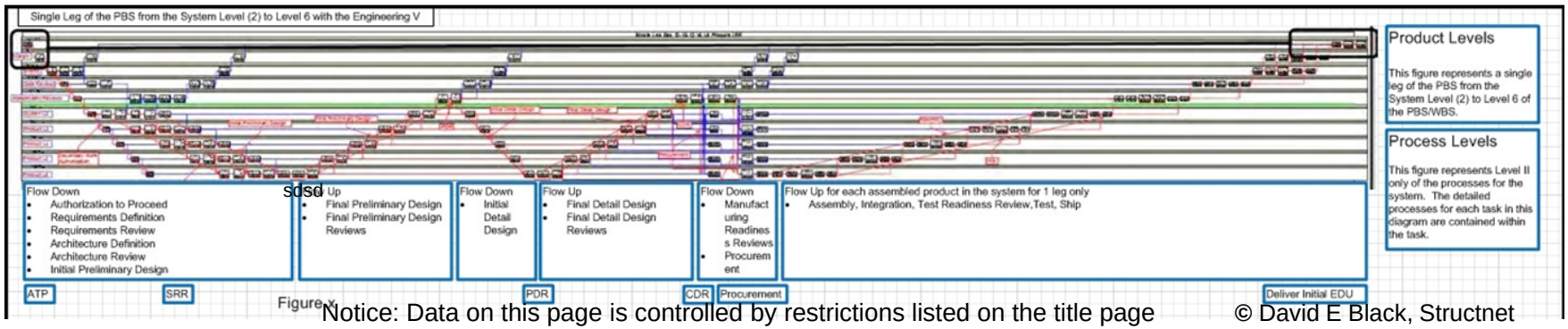


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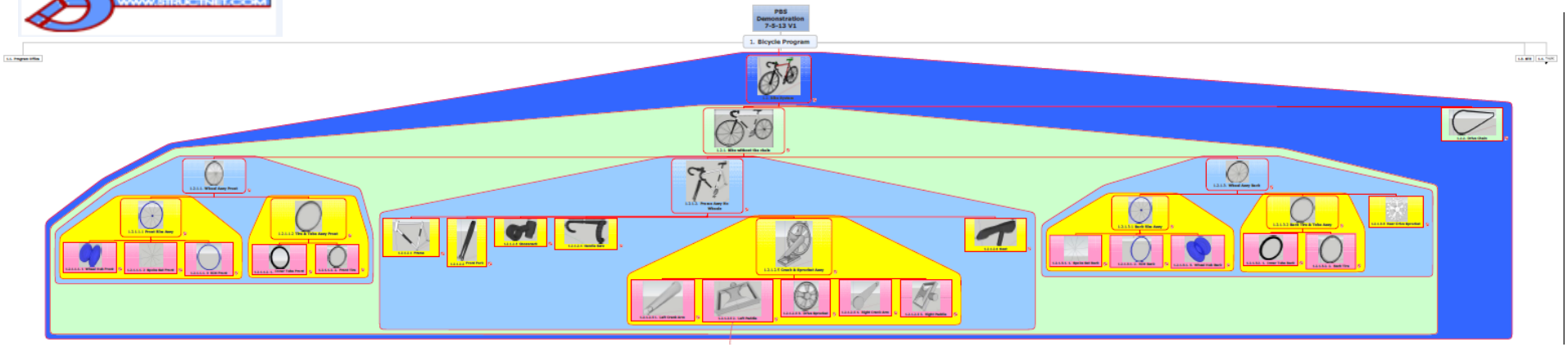
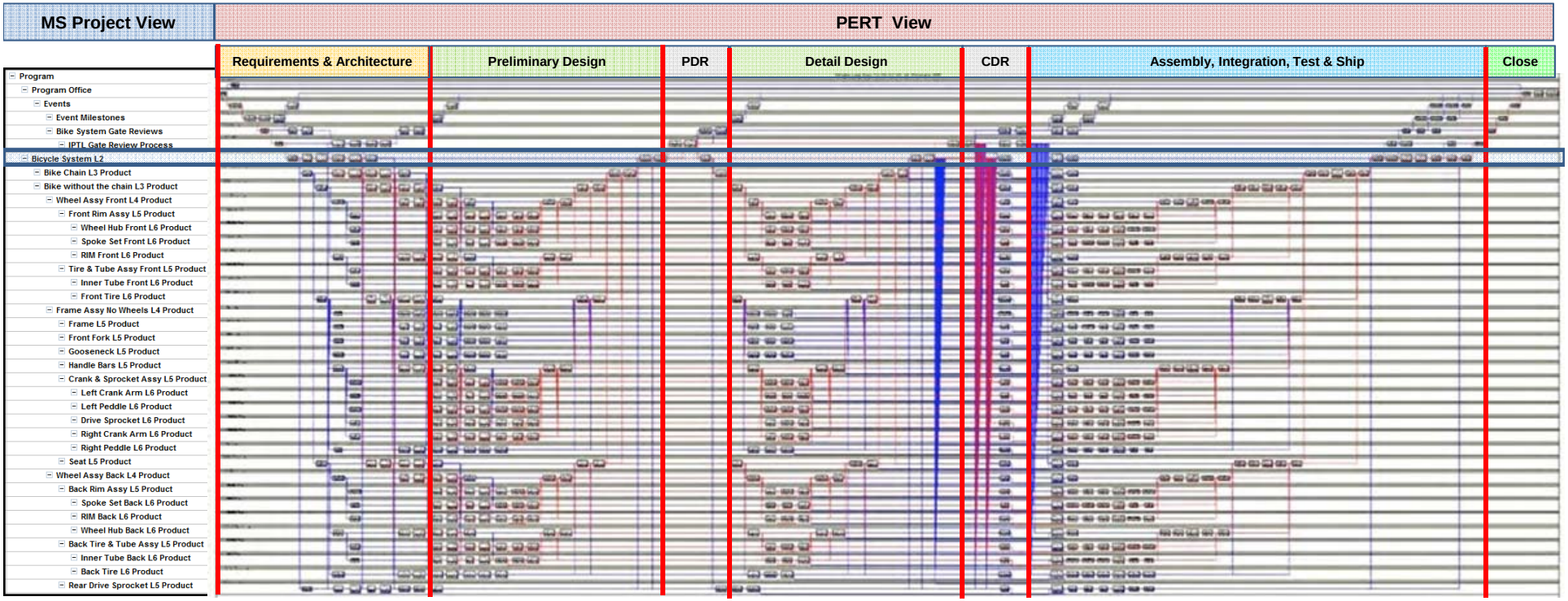
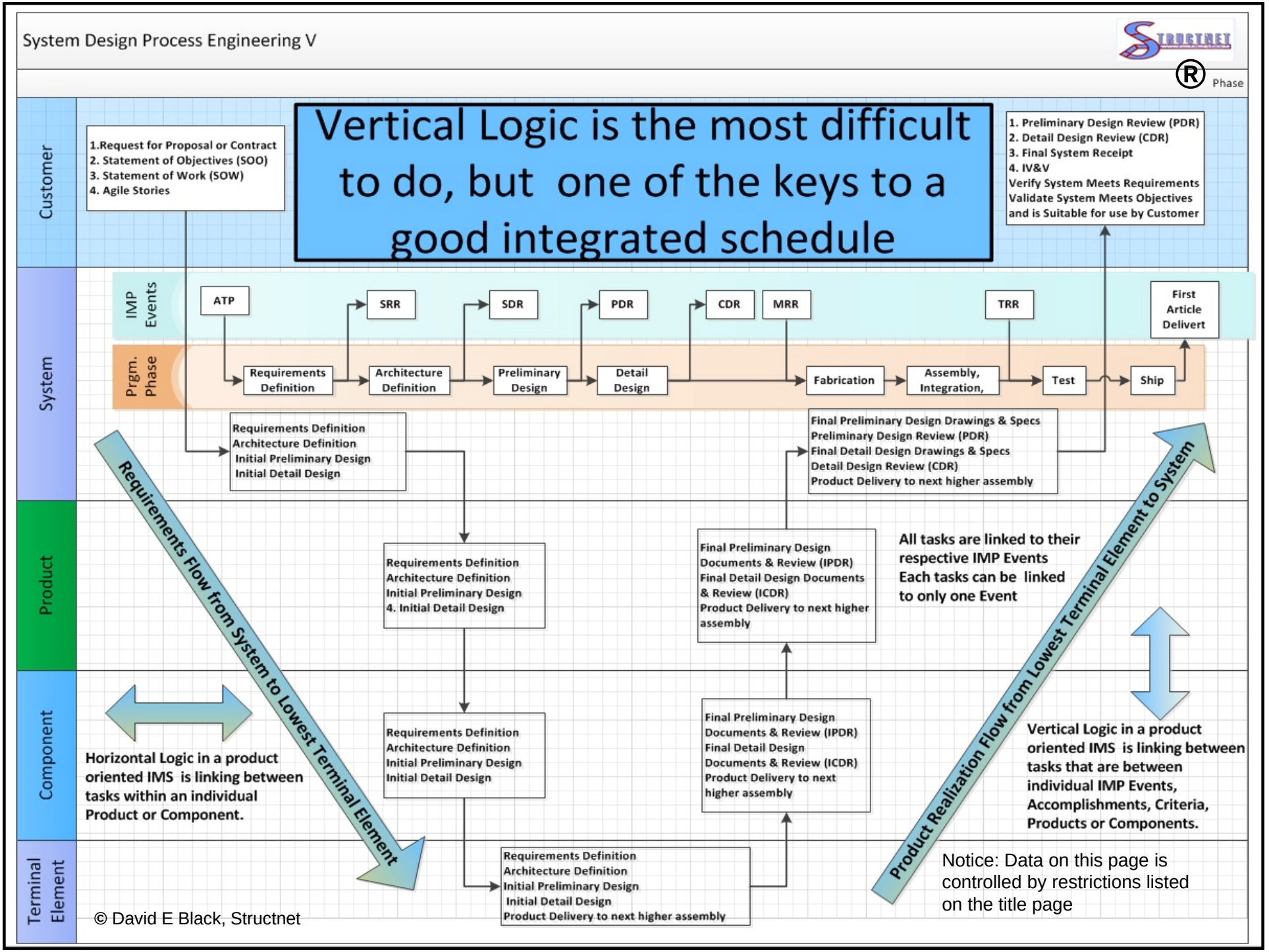
Figure x

Plan the Product



Schedule the Process




System Design Process Engineering V
Phase
Customer
System
Product
Component
Terminal Element
Vertical Logic is the most difficult to do, but one of the keys to a good integrated schedule
1.Request for Proposal or Contract
2. Statement of Objectives (SOO)
3. Statement of Work (SOW)
4. Agile Stories
1. Preliminary Design Review (PDR)
2. Detail Design Review (CDR)
3. Final System Receipt
4. IV&V
Verify System Meets Requirements
Validate System Meets Objectives
and is Suitable for use by Customer
IMP Events
ATP
SRR
SDR
PDR
CDR
MRR
TRR
First Article Delivert
Prgm. Phase
Requirements Definition
Architecture Definition
Preliminary Design
Detail Design
Fabrication
Assembly, Integration,
Test
Ship
Requirements Definition
Architecture Definition
Initial Preliminary Design
Initial Detail Design
Final Preliminary Design Drawings & Specs
Preliminary Design Review (PDR)
Final Detail Design Drawings & Specs
Detail Design Review (CDR)
Product Delivery to next higher assembly
Requirements Flow from System to Lowest Terminal Element
Requirements Definition
Architecture Definition
Initial Preliminary Design
4. Initial Detail Design
Final Preliminary Design
Documents & Review (IPDR)
Final Detail Design Documents
& Review (ICDR)
Product Delivery to next higher
assembly
All tasks are linked to their respective IMP Events
Each tasks can be linked to only one Event
Horizontal Logic in a product oriented IMS is linking between tasks within an individual Product or Component.
Requirements Definition
Architecture Definition
Initial Preliminary Design
Initial Detail Design
Final Preliminary Design
Documents & Review (IPDR)
Final Detail Design
Documents & Review (ICDR)
Product Delivery to next
higher assembly
Vertical Logic in a product oriented IMS is linking between tasks that are between individual IMP Events, Accomplishments, Criteria, Products or Components.
Product Realization Flow from Lowest Terminal Element to System
Requirements Definition
Architecture Definition
Initial Preliminary Design
Initial Detail Design
Product Delivery to next higher assembly
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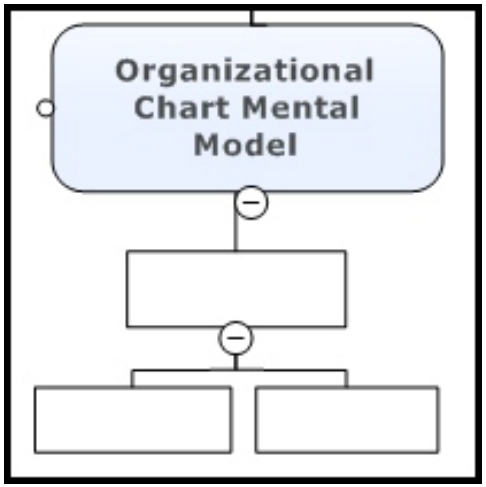
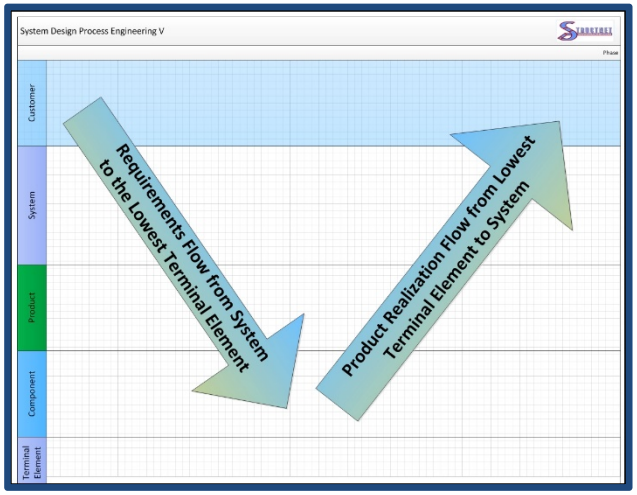
Five Models



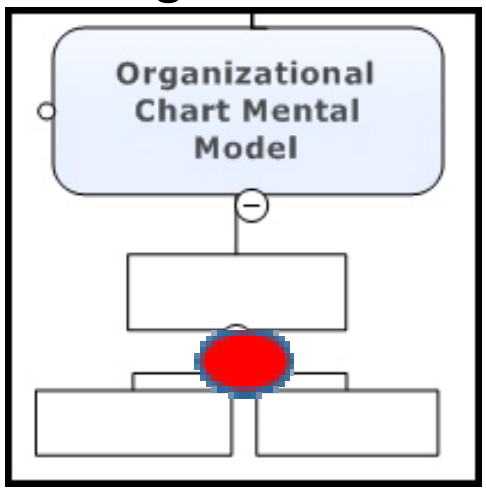
Org. Chart

1. The idea of a detailed pattern that repeats itself. REPLICATION
2. A fractal has a complex scaling ratio that usually exceeds the shape of the space it occupies. ZOOM

Fractal



Engineering V



Mind the Gaps

Process Model

When these 5 models are used for program planning and scheduling, a high degree of team communication, consistency, repeatability, reusability, accuracy, and speed of schedule creation and evaluation can be achieved.

