

Integrating a High Impact Summary Level Program Schedule (NDIA August 2016)

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- **Making the IMS Useful**
- **Integration with underlying IMS tools**
- **The situation & the challenge**
- **Examples**
- **Going Forward?**

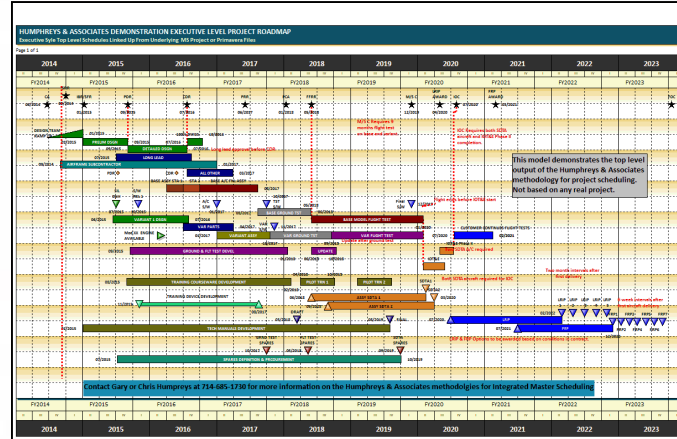
What motivated this session?

Many times our consultants have found clients working diligently, but greatly frustrated, hand drawing a “cartoon” schedule in Excel or PowerPoint.

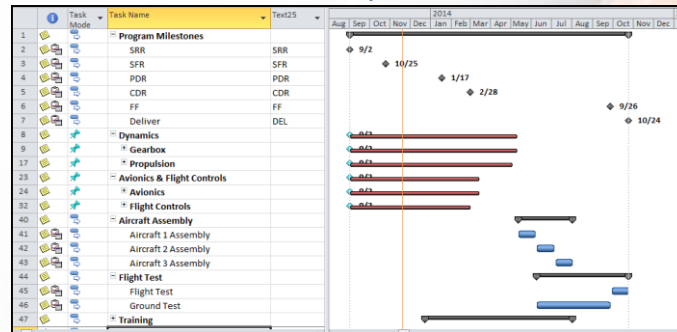
That is the schedule “the boss wants” so that we can “tell the story of the program.”

This schedule is not drawn once – it is updated each month at least.

This presentation is about a better way to have high impact electronically integrated executive schedules.

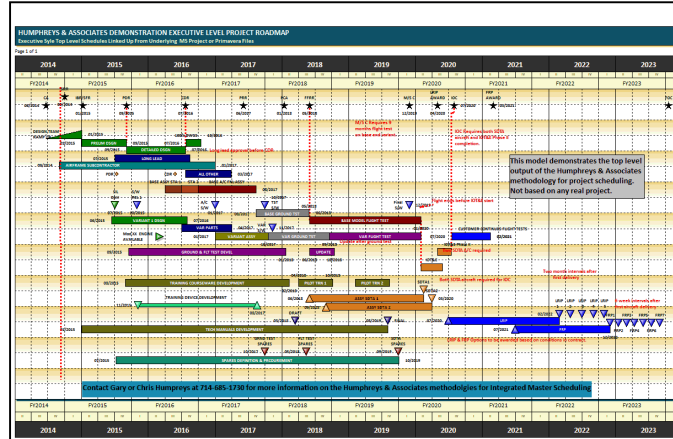


*** You are here**



What if there were easier ways?

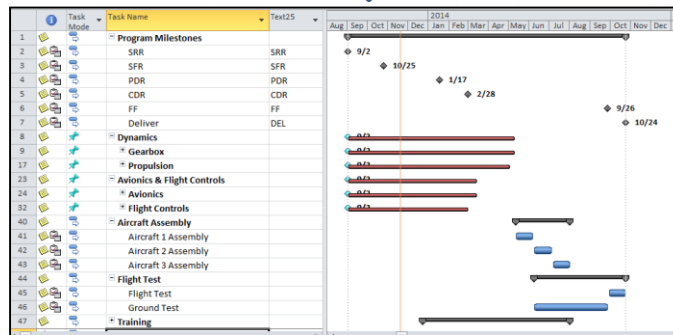
Top level one page comprehensive roadmap.



Structured your way to tell the story of the project and provide the roadmap the way you see it.

AUTOMATED ↔ **INTERFACE**

Detailed IMS meets all requirements and contains the touch points for the top level roadmap.



Structured per the contract requirements (WBS), OBS, other.



Project Roadmap

Humphreys & Associates Top Level Schedule Methodology (Copyright 2014 H&A)

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We want this!

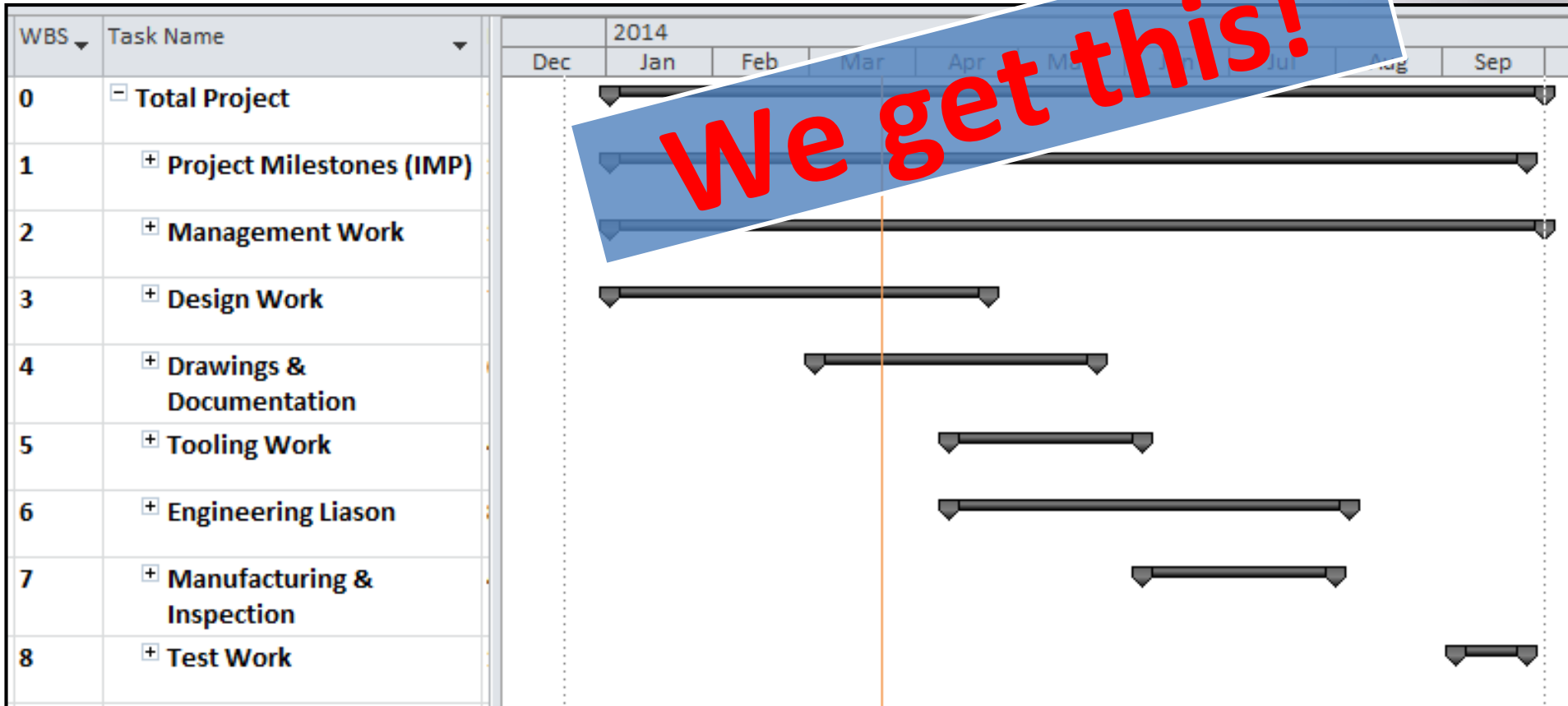
First delivery of baseline aircraft starts test. Other deliveries @ 1 per month.

Flight & Maint training must be complete before customer testing.

2 months Ground & 4 months Flight test

MS Project Collapse (Level 2)

We get this!



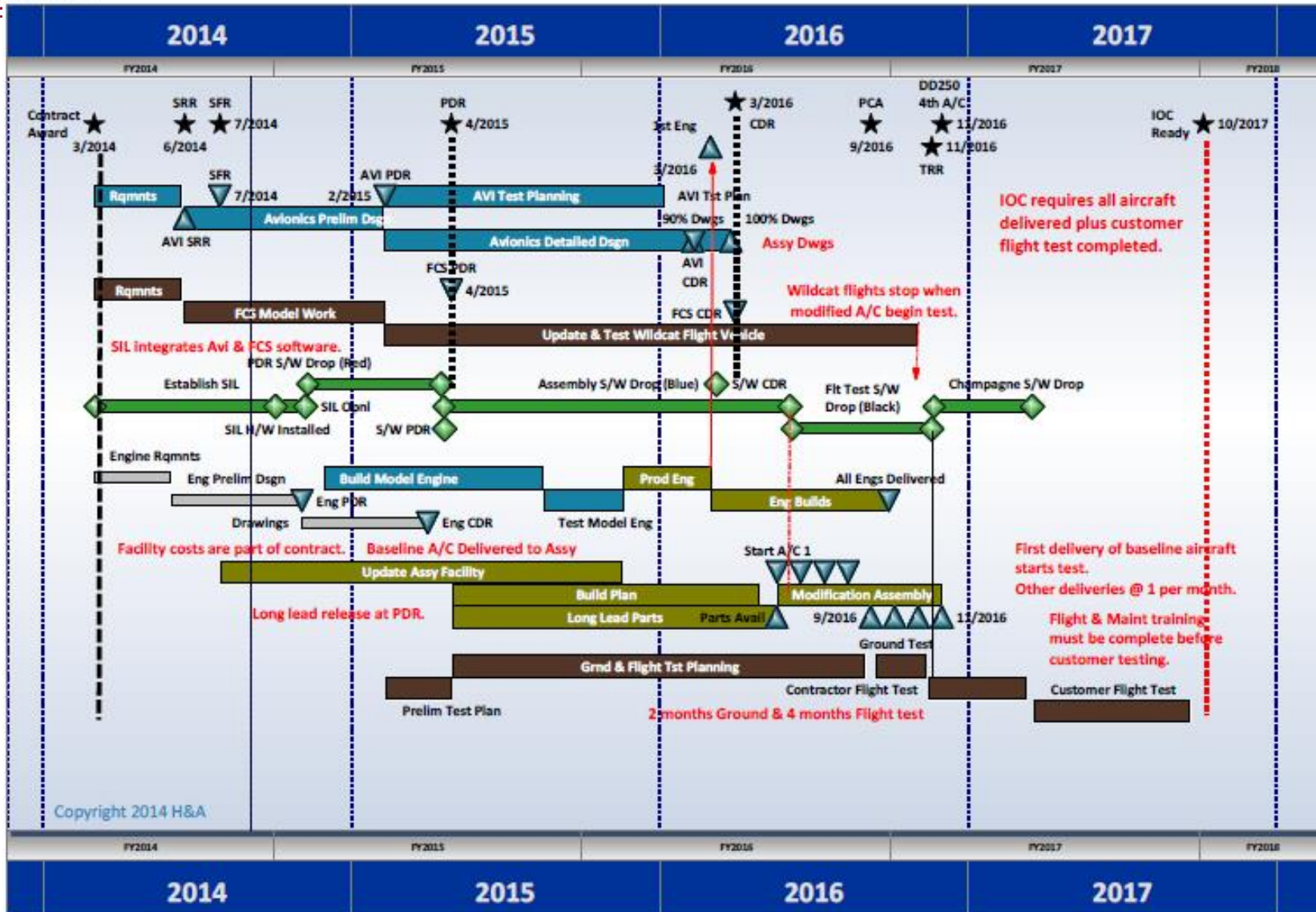
Background – survey

- Took an informal survey from my contacts of their current practices (8 companies)
- Predominant methodology is to collapse the schedule tool data and publish a milestone summary
- They “hand draw” top level when needed
- All had desire or interest in a “better way”



Project Roadmap

Humphreys & Associates Top Level Schedule Methodology (Copyright 2014 H&A)



IOC requires all aircraft delivered plus customer flight test completed.

Wildcat flights stop when modified A/C begin test.

First delivery of baseline aircraft starts test. Other deliveries @ 1 per month.

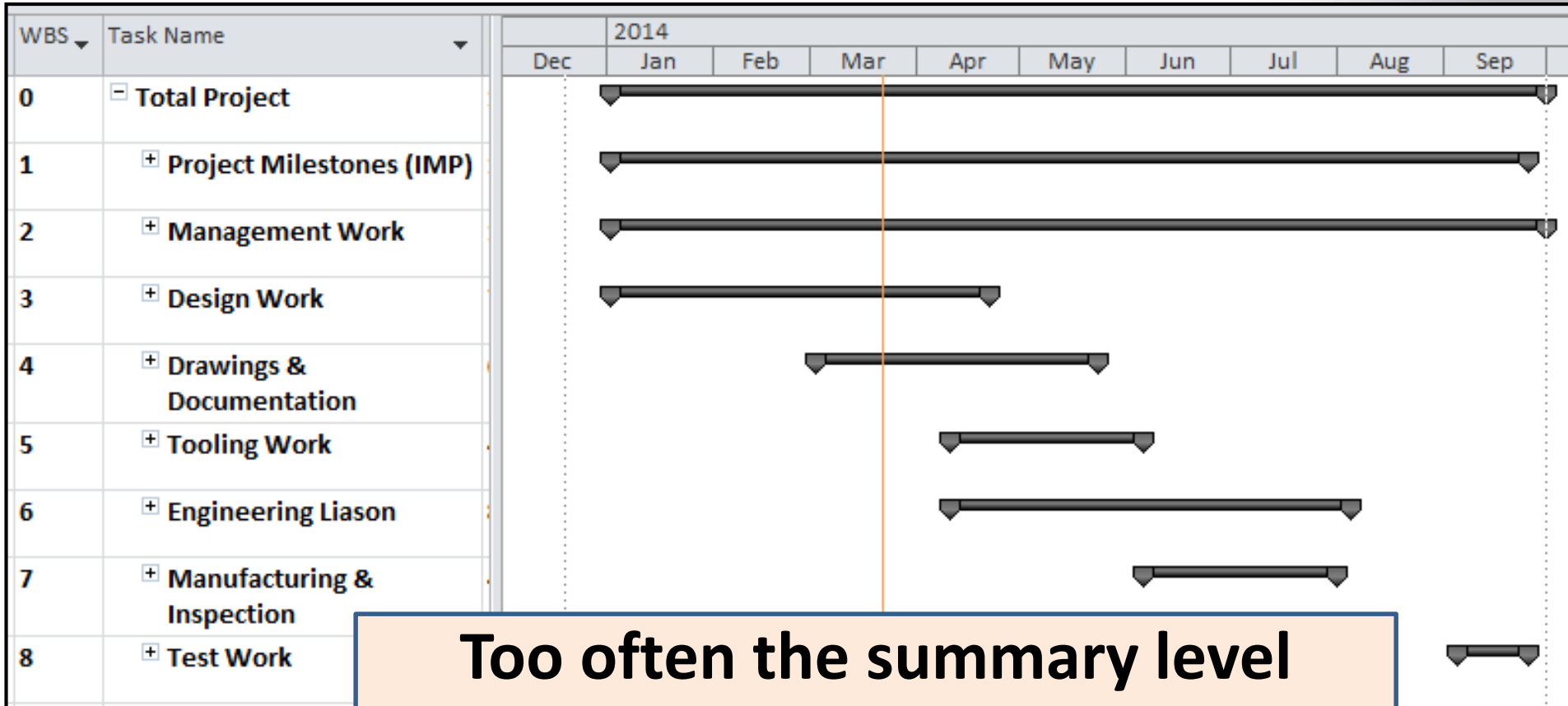
Flight & Maint training must be complete before customer testing.

2 months Ground & 4 months Flight test

What did we notice?

- It wasn't by WBS
- It wasn't by OBS
- It wasn't a simple roll-up
- It was a graphic story of the flow of the program without particular boundaries showing the work areas thought to be important to the leadership.
- It wasn't built inside the IMS tool
- It looked good – eye catching
- It was readable

MS Project Collapse (Level 2)



Too often the summary level schedule ends up just a collapse of the IMS in the tool.

Milestone Summary (MS Project)

WBS	Task Name	Duration	2014											
			Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
1	Project Milestones (IMP)	191 days	[Gantt bar spanning Dec to Oct]											
1.1	Contract Start	0 days	◆ 1/2											
1.1	Conceptual Design Review Complete	0 days	◆ 3/21											
1.1	Draft Design Review Complete	0 days	◆ 3/21											
1.1	Final Design Review Complete	0 days	◆ 4/21											
1.1	Tooling Dwgs Released	0 days	◆ 4/10											
1.1	Fabrication Dwgs Released	0 days	◆ 4/25											
1.1	Assy Dwgs Released	0 days	◆ 5/23											
1.1	Tooling Available	0 days	◆ 6/5											
1.1	Model Complete	0 days	◆ 7/31											
1.1	Test Complete	0 days	◆ 9/25											
1.1	Contract Complete	0 days	◆ 9/25											

Or a set of milestones plotted or listed with dates.

What are we talking about?

- A methodology to electronically integrate data from automated tools like Project or Primavera into a set of high level executive type schedules that let you tell the story of the program your way.
- Lots of different terms – Road Map, Summary Master Schedule, Master Schedule, Phasing Schedule, and so on...

What does literature say about Summary Schedule?

- Highest level - least detailed
- One page if possible
- Highlights milestones, events, phases
- Vertically integrated from IMS
- Convey the big picture
- Used to orient others

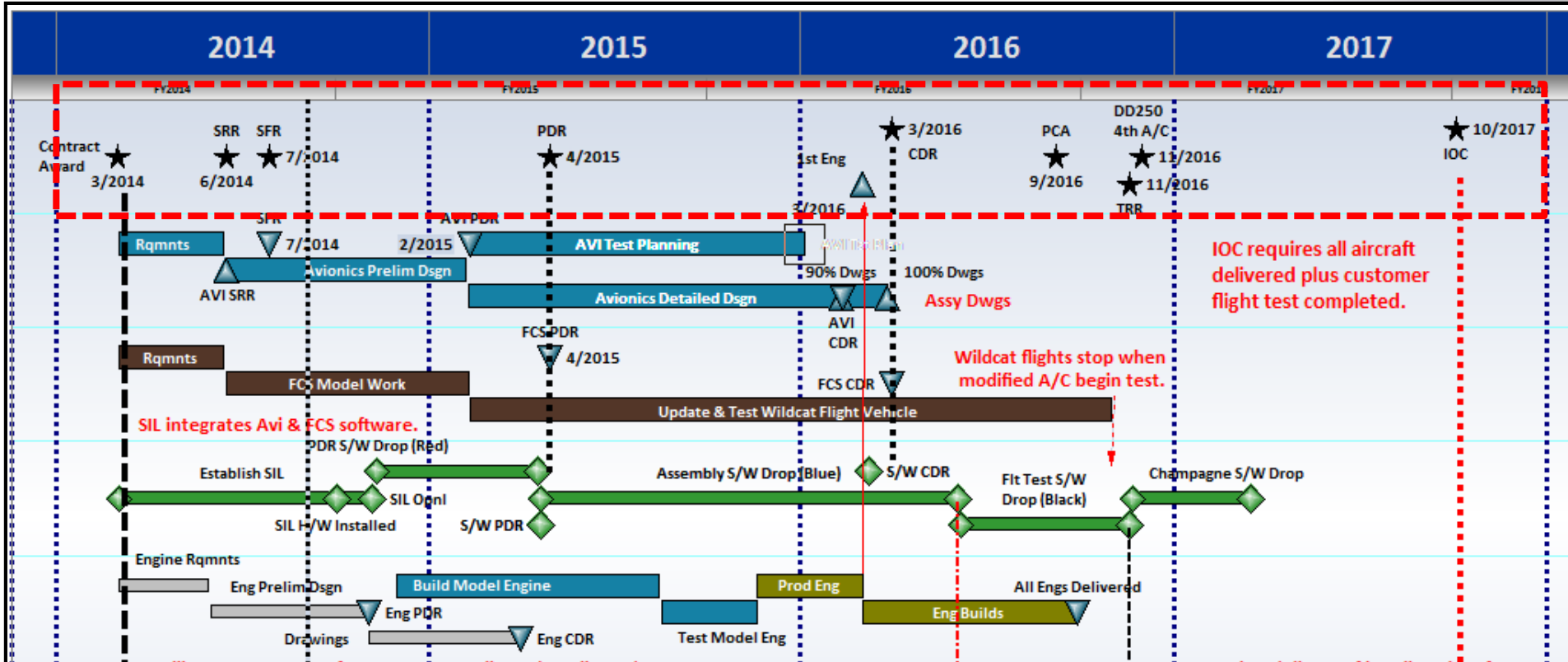
Whatever the name...

- We need to be able to tell and to sell the project plan.
- We need one or more top level summary views of the plan that can be used to explain the program in a highly visual and easily understandable way.
- The IMS is a major investment – we need to get more out of it.

So what is the problem?

- Schedule tools deal with “lines” – each activity is a line
- Projects deal with summaries of lines – usually by WBS or OBS
- Summaries usually stick within structural hierarchies
- Some progress can be made with “custom grouping” in the IMS tool
- Formatting is always an issue

Hand-packed condensed



In a purpose built tool the many IMS lines can be coded to fit into a single line on the schedule.

One Challenge

Summarize items from different parts of project into a single summary task



An Example

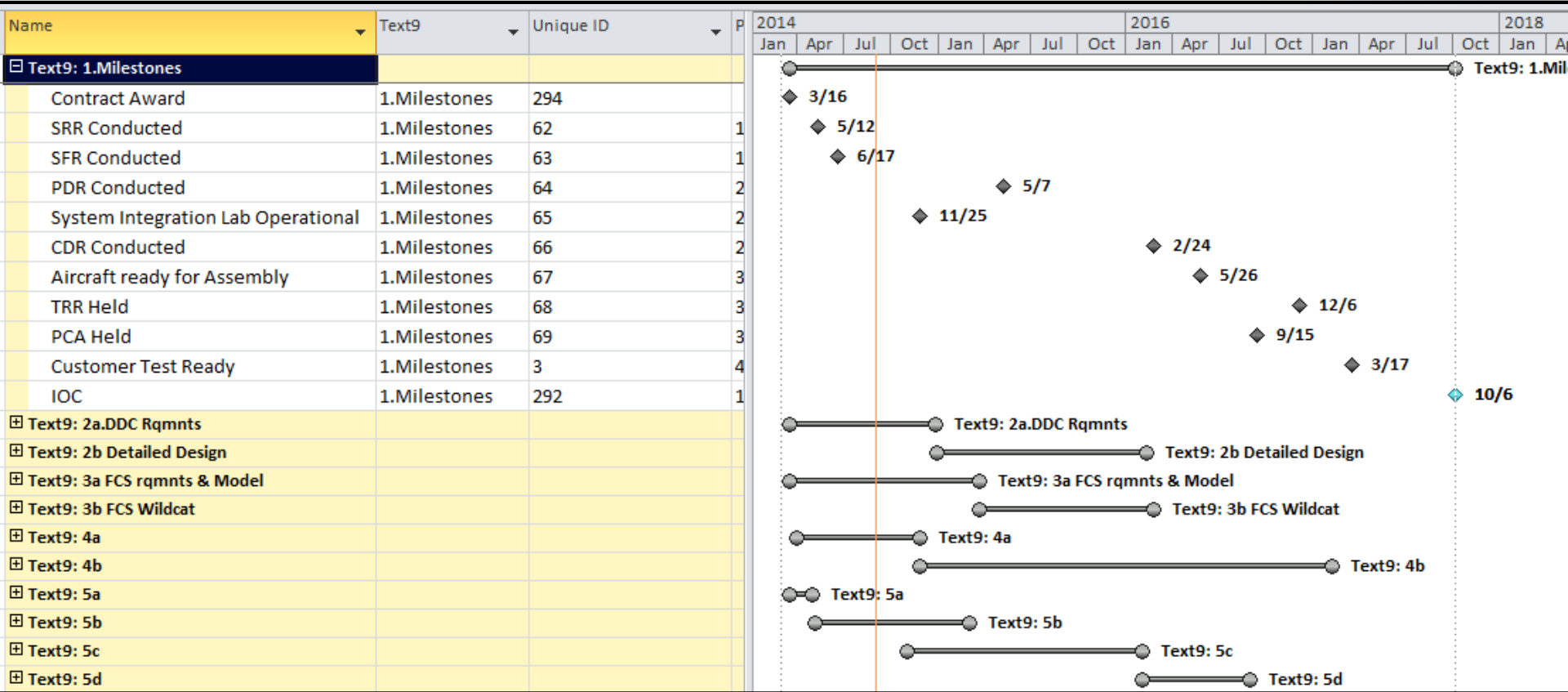
Name	Text9	Unique ID	P	2014				2016			
				Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
[-] Program Top		46		[Gantt bar spanning 2014 Jan to 2016 Oct]							
+ Program Milestones		1		[Gantt bar spanning 2014 Jan to 2016 Oct]							
+ Air Vehicle		9		[Gantt bar spanning 2014 Jan to 2016 Oct]							
+ System Engineering		171		[Gantt bar spanning 2014 Jan to 2016 Oct]							
Program Management		170		[Gantt bar spanning 2014 Jan to 2016 Oct]							
+ System Test & Eval		18		[Gantt bar spanning 2014 Apr to 2016 Oct]							
+ Training		19		[Gantt bar spanning 2014 Jan to 2016 Oct]							
Data (Not used)		20		[Gantt bar spanning 2014 Jan to 2016 Oct]							
Peculiar Support Equip (Not used)		21		[Gantt bar spanning 2014 Jan to 2016 Oct]							
Common Support Equip (Not used)		22		[Gantt bar spanning 2014 Jan to 2016 Oct]							
Operational Site Activation (Not used)		23		[Gantt bar spanning 2014 Jan to 2016 Oct]							
Industrial Facilities (Not used)		24		[Gantt bar spanning 2014 Jan to 2016 Oct]							
+ Initial Spares & Repairs		25		[Gantt bar spanning 2014 Apr to 2016 Oct]							

We have a file built in MS Project that uses some of the MIL-STD881 elements and covers a couple of years. We will look at one way to build the integrate summary level schedule.

Quickly runs off one page

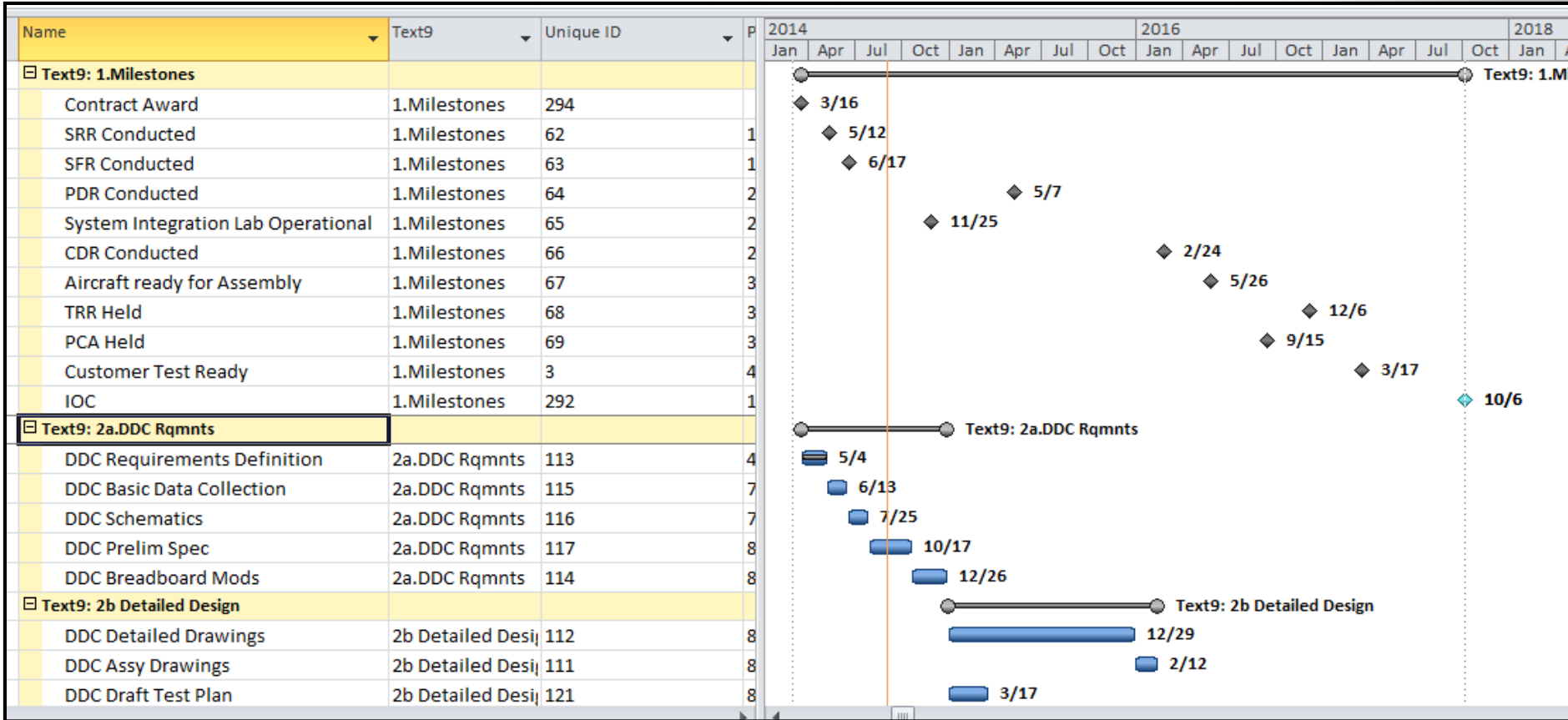
Name	Text9	Unique ID	P	2014				2016				2018			
				Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
Program Top		46		[Gantt bars spanning 2014-2018]											
Program Milestones		1		[Gantt bars spanning 2014-2018]											
Events		2		[Gantt bars spanning 2014-2018]											
Contract Award	1.Milestones	294		[Gantt bars spanning 2014-2018]											
SRR Conducted	1.Milestones	62	1	[Gantt bars spanning 2014-2018]											
SFR Conducted	1.Milestones	63	1	[Gantt bars spanning 2014-2018]											
PDR Conducted	1.Milestones	64	2	[Gantt bars spanning 2014-2018]											
System Integration Lab Operatic	1.Milestones	65	2	[Gantt bars spanning 2014-2018]											
CDR Conducted	1.Milestones	66	2	[Gantt bars spanning 2014-2018]											
Aircraft ready for Assembly	1.Milestones	67	3	[Gantt bars spanning 2014-2018]											
TRR Held	1.Milestones	68	3	[Gantt bars spanning 2014-2018]											
PCA Held	1.Milestones	69	3	[Gantt bars spanning 2014-2018]											
Customer Test Ready	1.Milestones	3	4	[Gantt bars spanning 2014-2018]											
IOC	1.Milestones	292	1	[Gantt bars spanning 2014-2018]											
Accomplishments		4		[Gantt bars spanning 2014-2018]											
Criteria		7		[Gantt bars spanning 2014-2018]											
Air Vehicle		9		[Gantt bars spanning 2014-2018]											
System Engineering		171		[Gantt bars spanning 2014-2018]											
Program Management		170		[Gantt bars spanning 2014-2018]											
System Test & Eval		18		[Gantt bars spanning 2014-2018]											
Training		19		[Gantt bars spanning 2014-2018]											
Data (Not used)		20		[Gantt bars spanning 2014-2018]											

MSP Custom Grouping



Some coding has been done to the MS Project file so we group and sort to make somewhat of an intelligent picture.

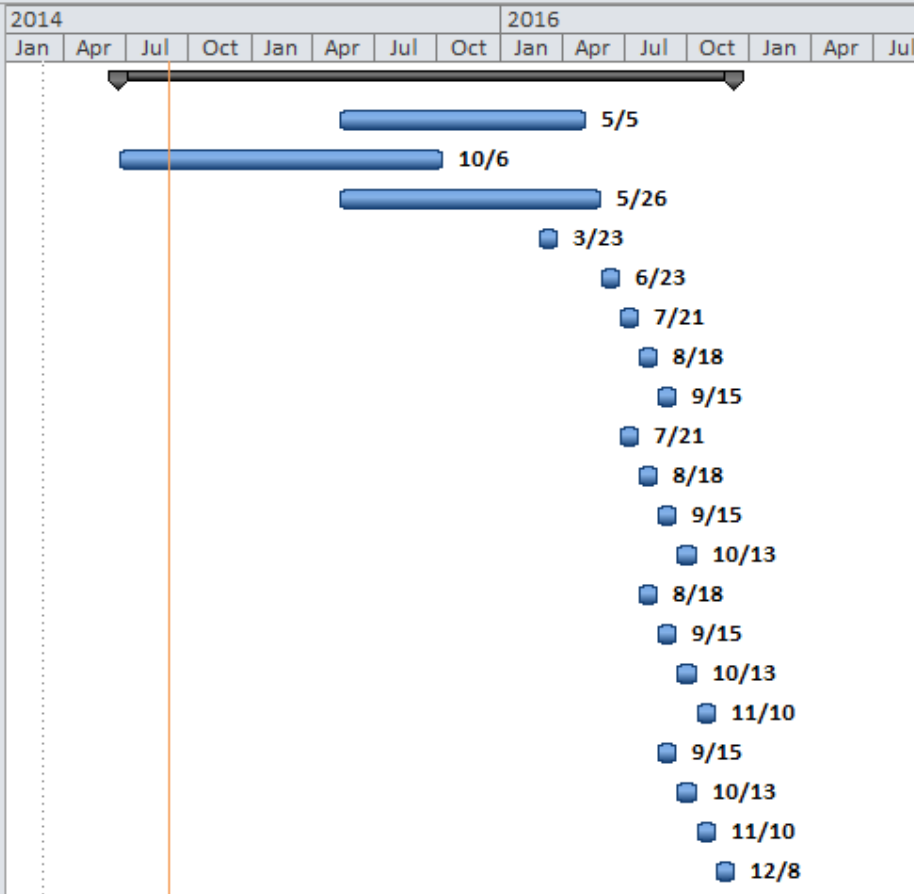
Details Within Groups



Expanding the groups takes you back to the full MS Project IMS.

What to Portray?

Name	Text9	Unique ID	P	2014				2016							
				Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct				
IAT&CO		49													
Manufacturing Plan Preparation	6a	293	7												
Update Assy Facility & Fixtures	6a	164	6												
Procure Long Lead Parts	6a	165	7												
Procure All Other Parts	6a	166	9												
A/C 1 Station 1	6b	167	1												
A/C 1 Station 2	6b	163	1												
A/C 1 Station 3	6b	162	1												
A/C 1 Station 4	6b	168	1												
A/C 2 Station 1	6c	169	1												
A/C 2 Station 2	6c	16	1												
A/C 2 Station 3	6c	17	1												
A/C 2 Station 4	6c	172	1												
A/C 3 Station 1	6d	177	1												
A/C 3 Station 2	6d	178	1												
A/C 3 Station 3	6d	179	1												
A/C 3 Station 4	6d	180	1												
A/C 4 Station 1	6e	181	1												
A/C 4 Station 2	6e	182	1												
A/C 4 Station 3	6e	183	1												
A/C 4 Station 4	6e	184	1												



From all these details in the IMS what rises to the level of being important enough for the summary schedule?

- Milestones Professional from KIDASA
- Inexpensive
- Actually works
- Provides very much flexibility
- Automates the data capture between MSP or Primavera and itself to make the schedule you want

Note that neither Humphreys & Associates nor I have any relationship with KIDASA.
We bought their product and we use it.

The Process

- You must understand your own schedule (the tool will not build the schedule for you)
- You decide what you want to show and how you want to show it
- You “hand pack” the Summary Level schedule yourself to get the rough picture of what you want
- You then link the two tools and refine the picture

The Background

Calendar – top & bottom in Navy blue

Light gold background to show symbols

Example Layouts																														
Page 1 of 1																														
2014				2015				2016				2017																		
Q2'14	Q3'14	Q4'14		Q1'15		Q2'15		Q3'15		Q4'15		Q1'16		Q2'16		Q3'16		Q4'16		Q1'17		Q2'17								
Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun						
Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun						
Q2'14	Q3'14	Q4'14		Q1'15		Q2'15		Q3'15		Q4'15		Q1'16		Q2'16		Q3'16		Q4'16		Q1'17		Q2'17								
2014				2015				2016				2017																		

You control everything – the look and feel of the summary schedule including the framing of it and the background.

A “Busy” Background

Example Layouts

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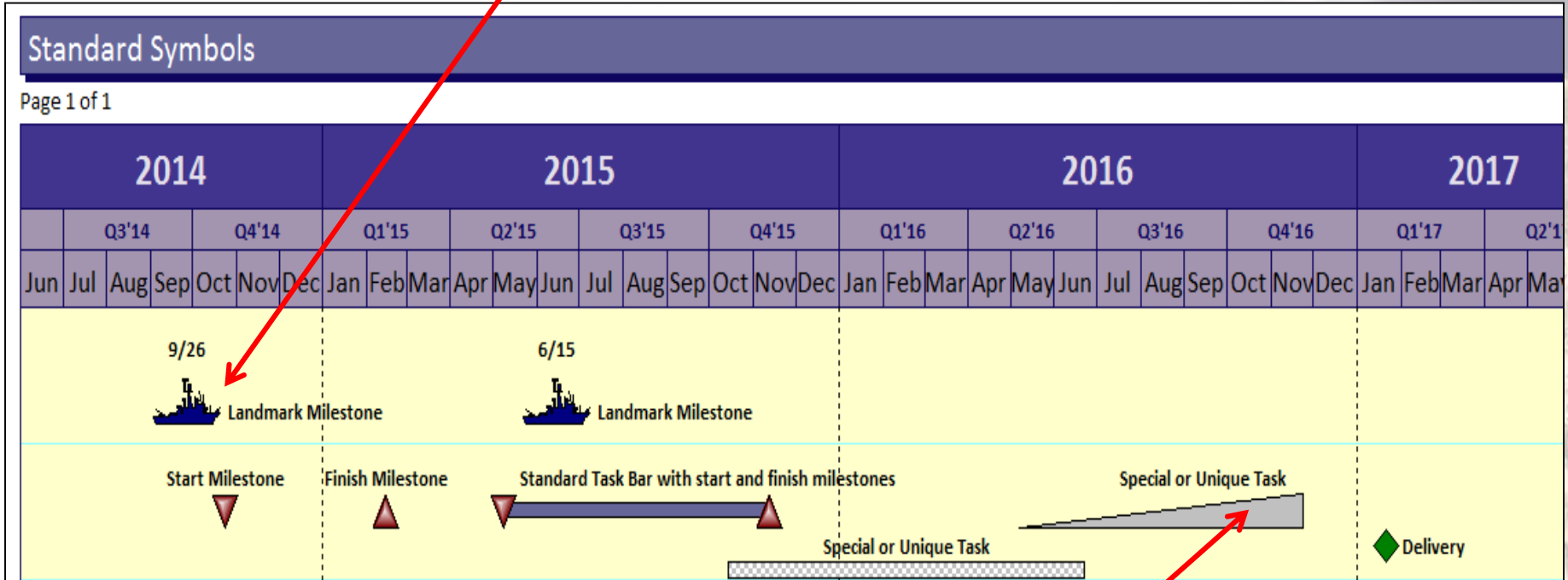
2014				2015				2016				2017												
Q2'14	Q3'14	Q4'14		Q1'15	Q2'15	Q3'15		Q4'15	Q1'16	Q2'16	Q3'16		Q4'16	Q1'17	Q2'17									
Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun

You decide how much is enough – you need just enough background work to make you schedule pop out of the frame.

Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Q2'14	Q3'14	Q4'14		Q1'15	Q2'15	Q3'15		Q4'15	Q1'16	Q2'16	Q3'16		Q4'16	Q1'17	Q2'17																					
2014				2015				2016				2017																								

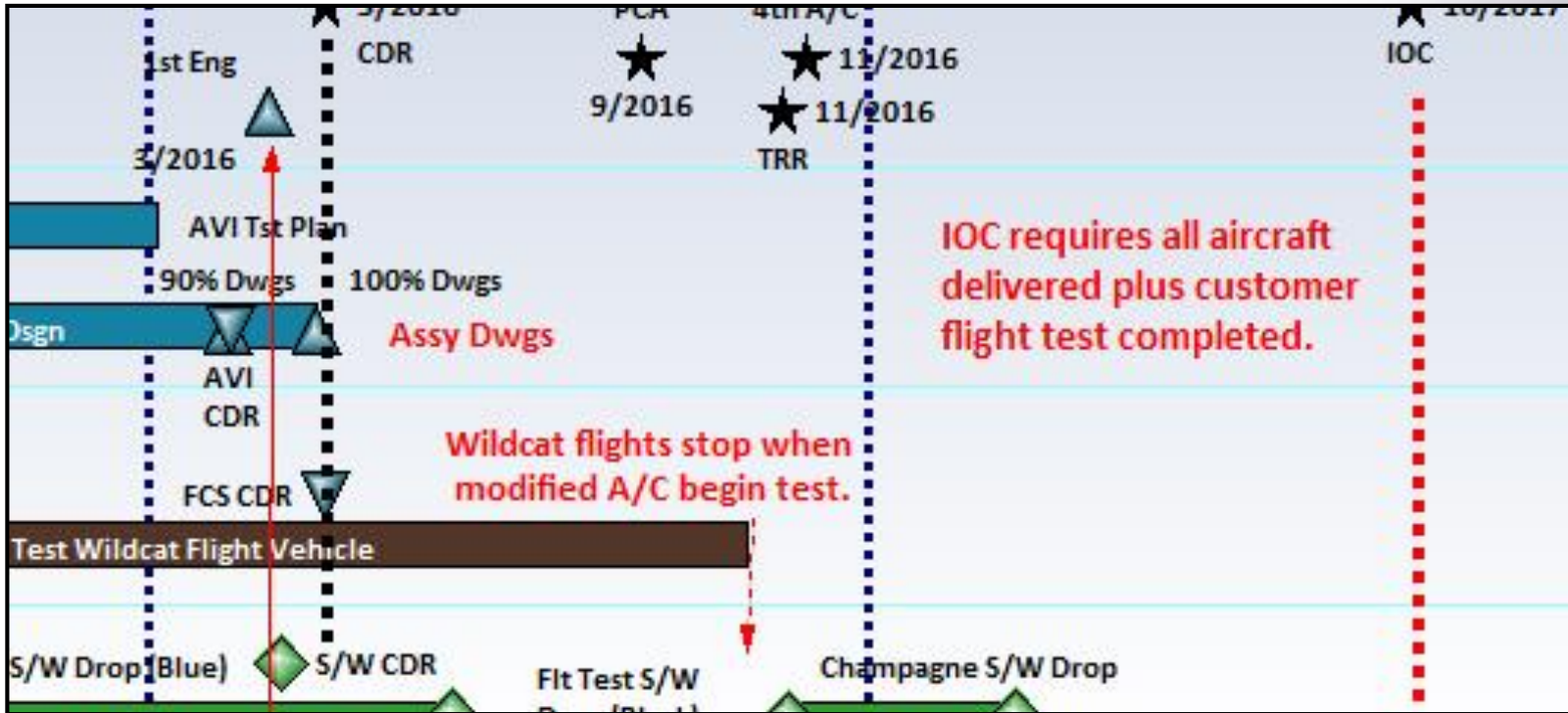
Some Standards for the Example

Use Landmark symbols.

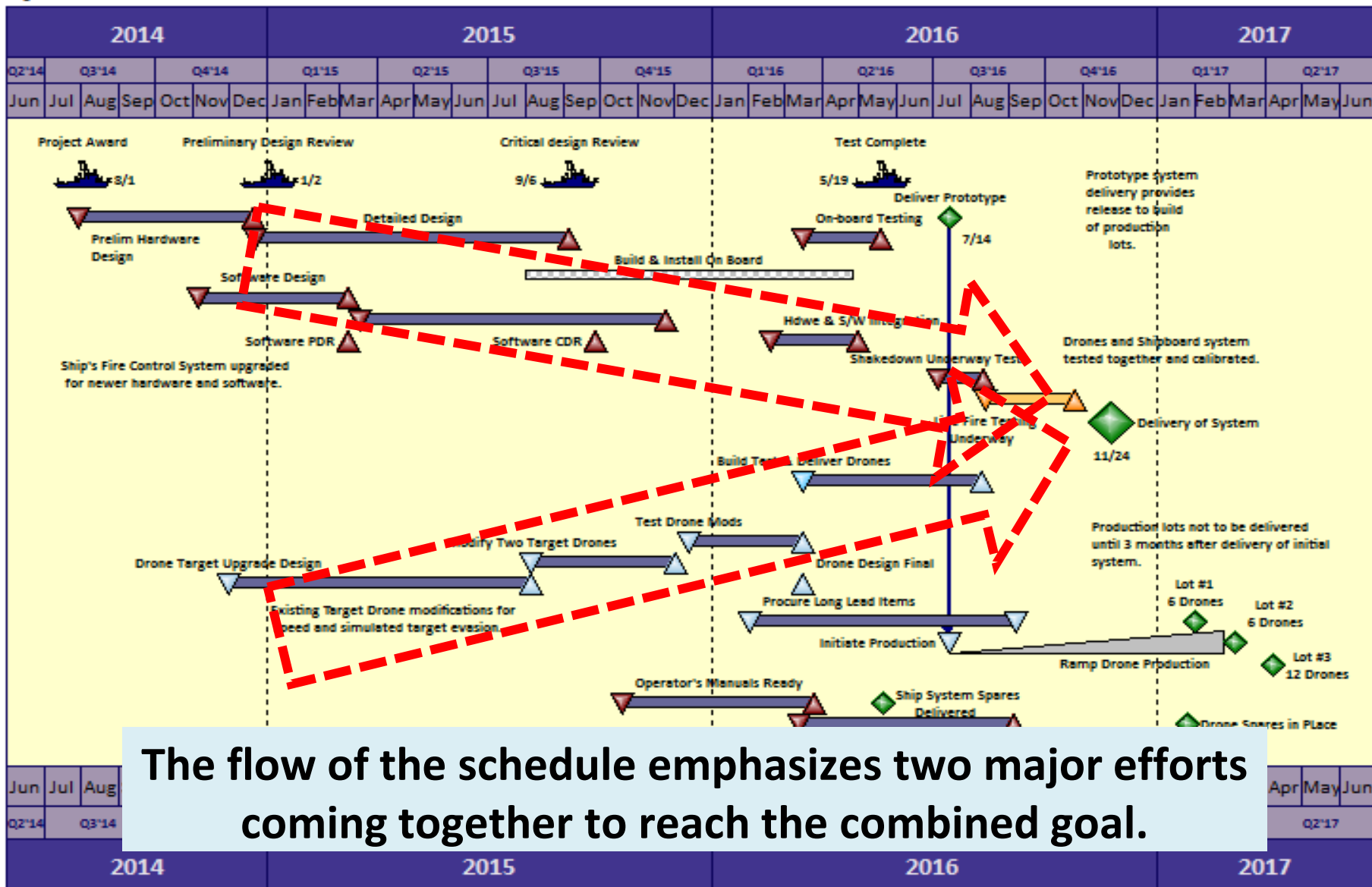


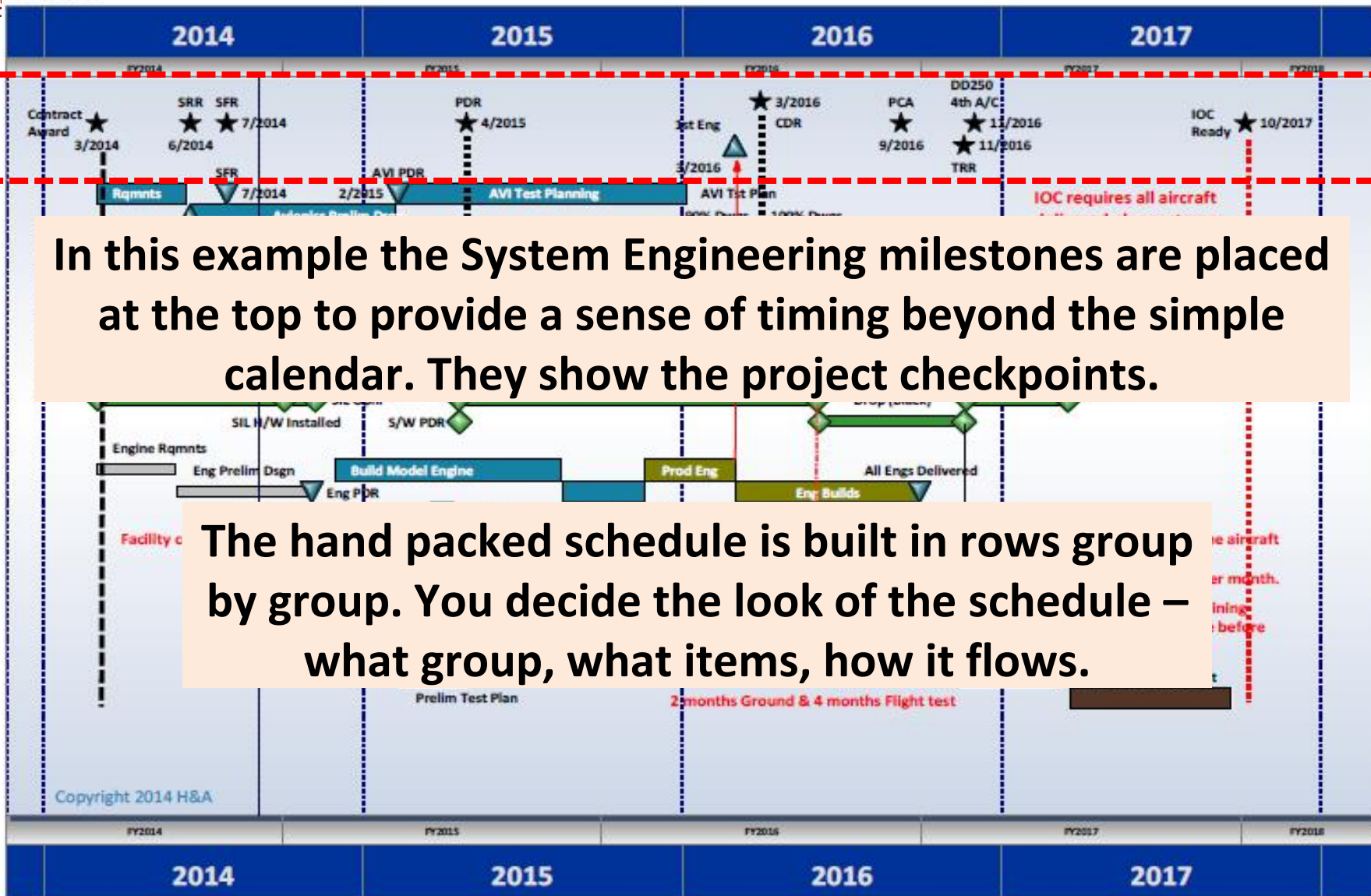
A few unique symbols can tell a lot of the story especially if color coded.

Commenting Helps



Being able to add comments to the field of the schedule allows you to point the reader to important decision points or areas of the schedule.





In this example the System Engineering milestones are placed at the top to provide a sense of timing beyond the simple calendar. They show the project checkpoints.

The hand packed schedule is built in rows group by group. You decide the look of the schedule – what group, what items, how it flows.

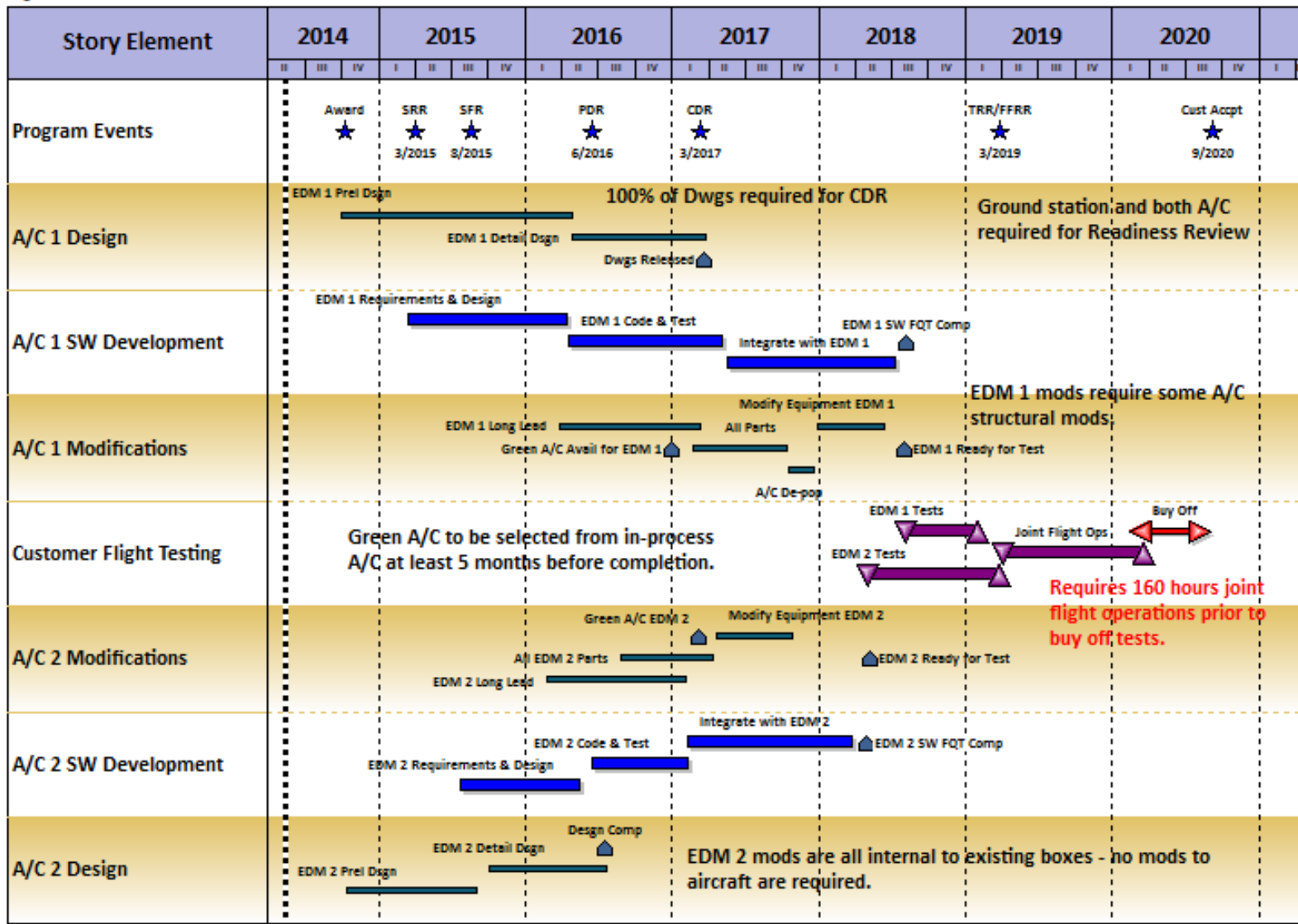
Highlight Changes

	2014			2015	
	FY2014			FY2015	
Contract Award	3/2014	SRR 5/2014	SFR 6/2014	PDR 5/2015	1

As you update your summary schedule from the IMS you can be notified where dates have changed – these changed dates are temporarily highlighted for you.

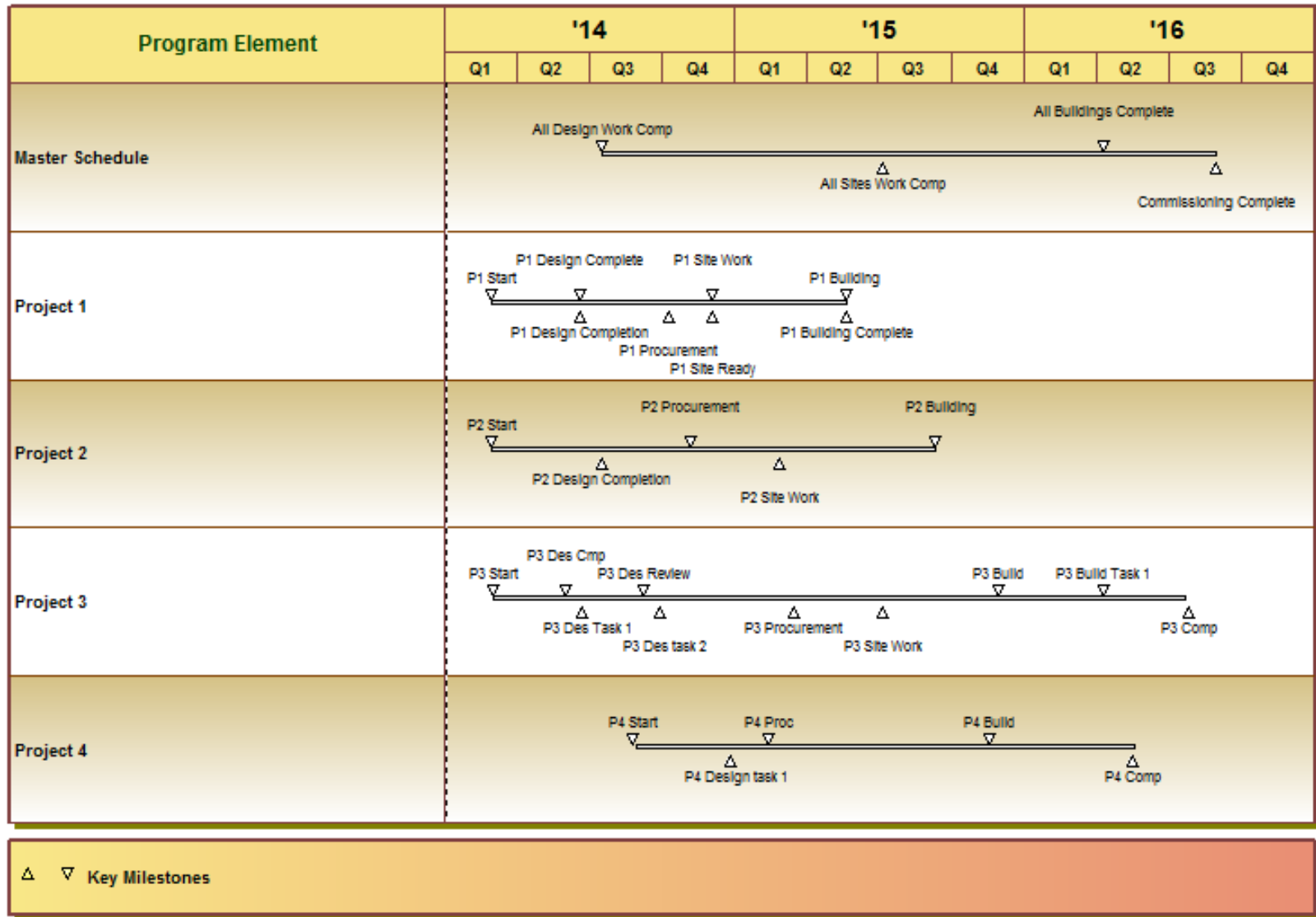
More schedules?

- Why limit the Summary Schedule to one?
- There are many potential stories to be told and highlights to be made.
- Multiple top level schedules can feed off one MSP or Primavera file
- The only challenge is knowing what you want to show and building it for the first time to get it right.



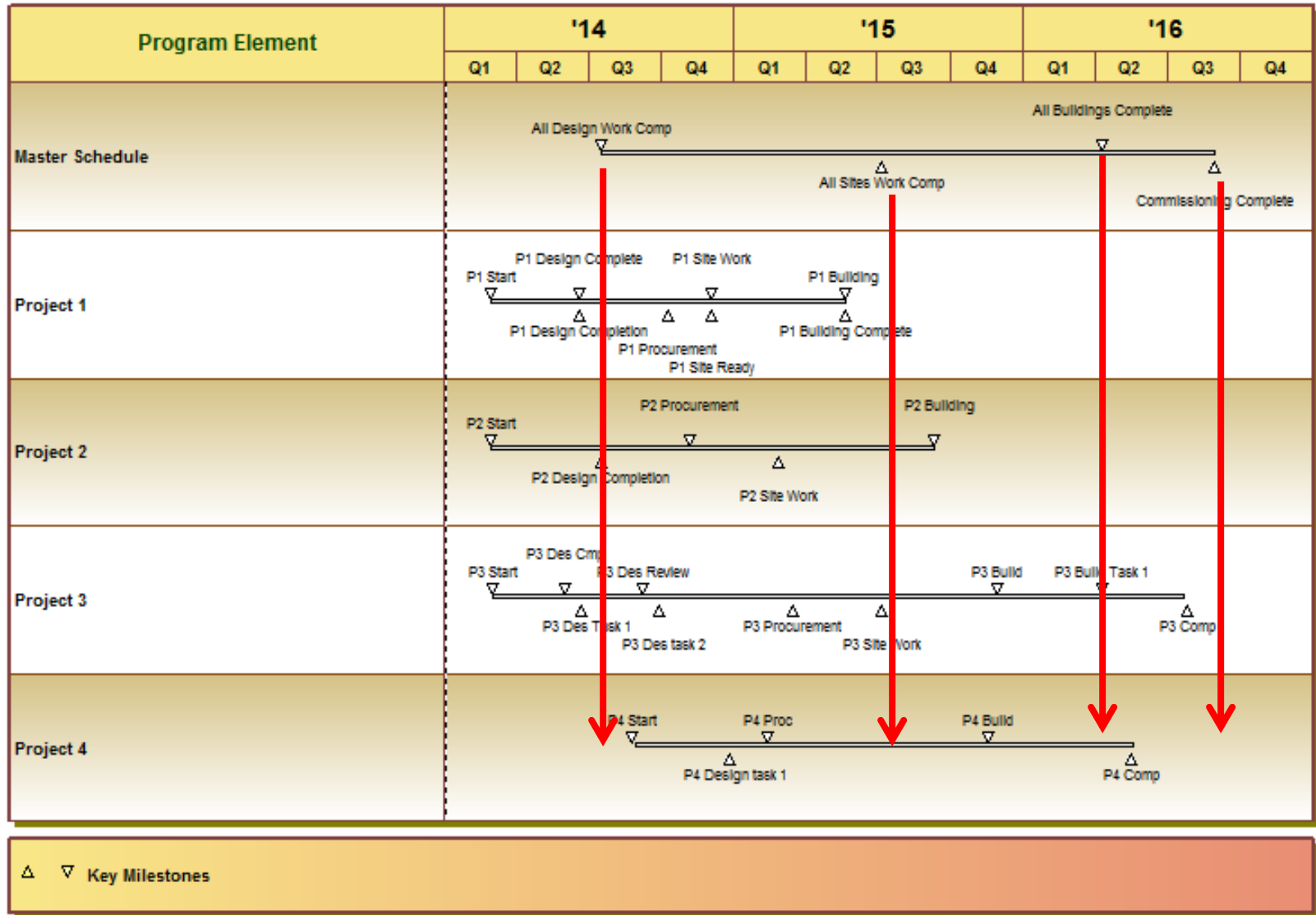
H&A Power Project (Humphreys & Assoc 2014)

Birds-on-a-wire Example Layout



H&A Power Project (Humphreys & Assoc 2014)

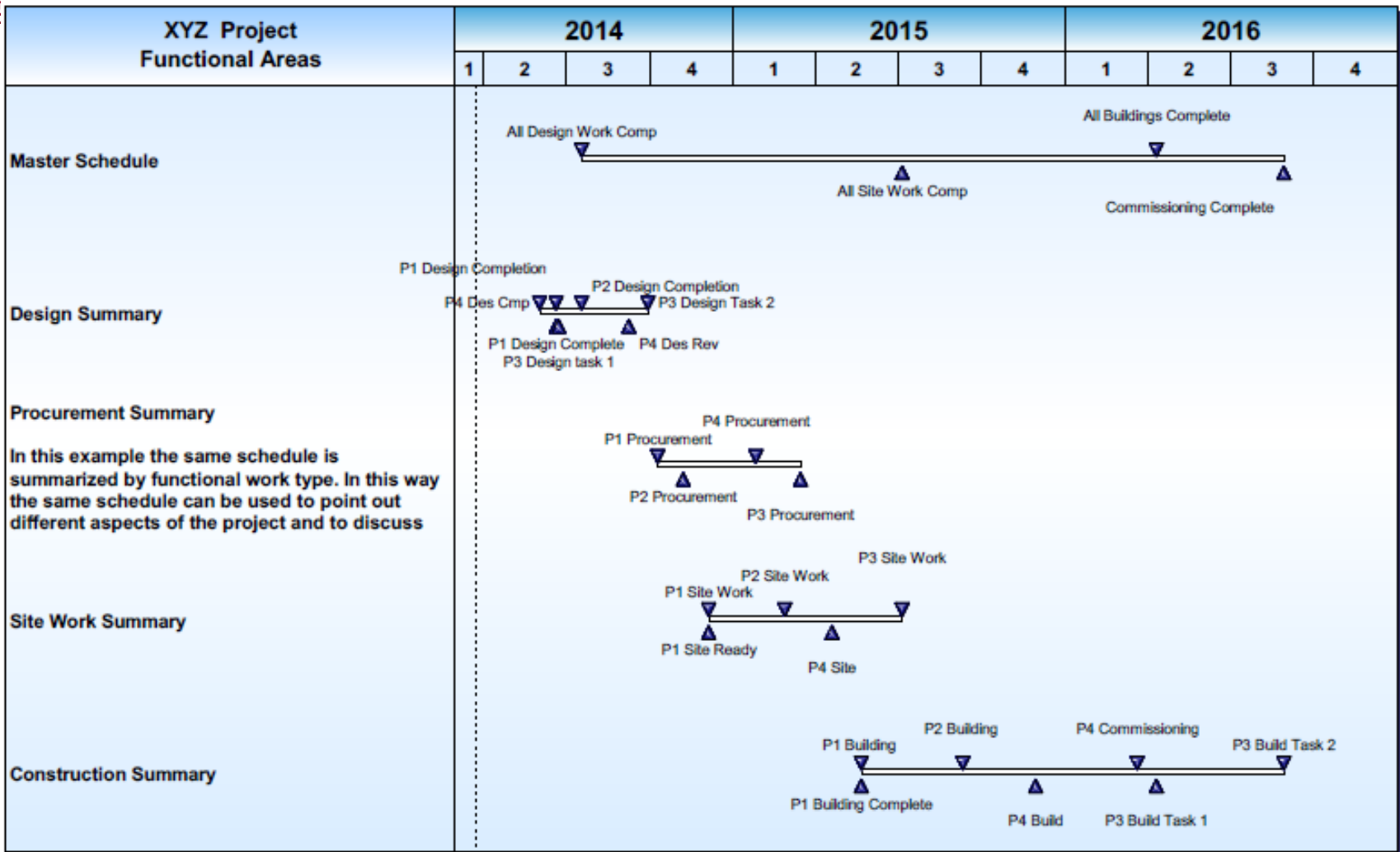
Birds-on-a-wire Example Layout





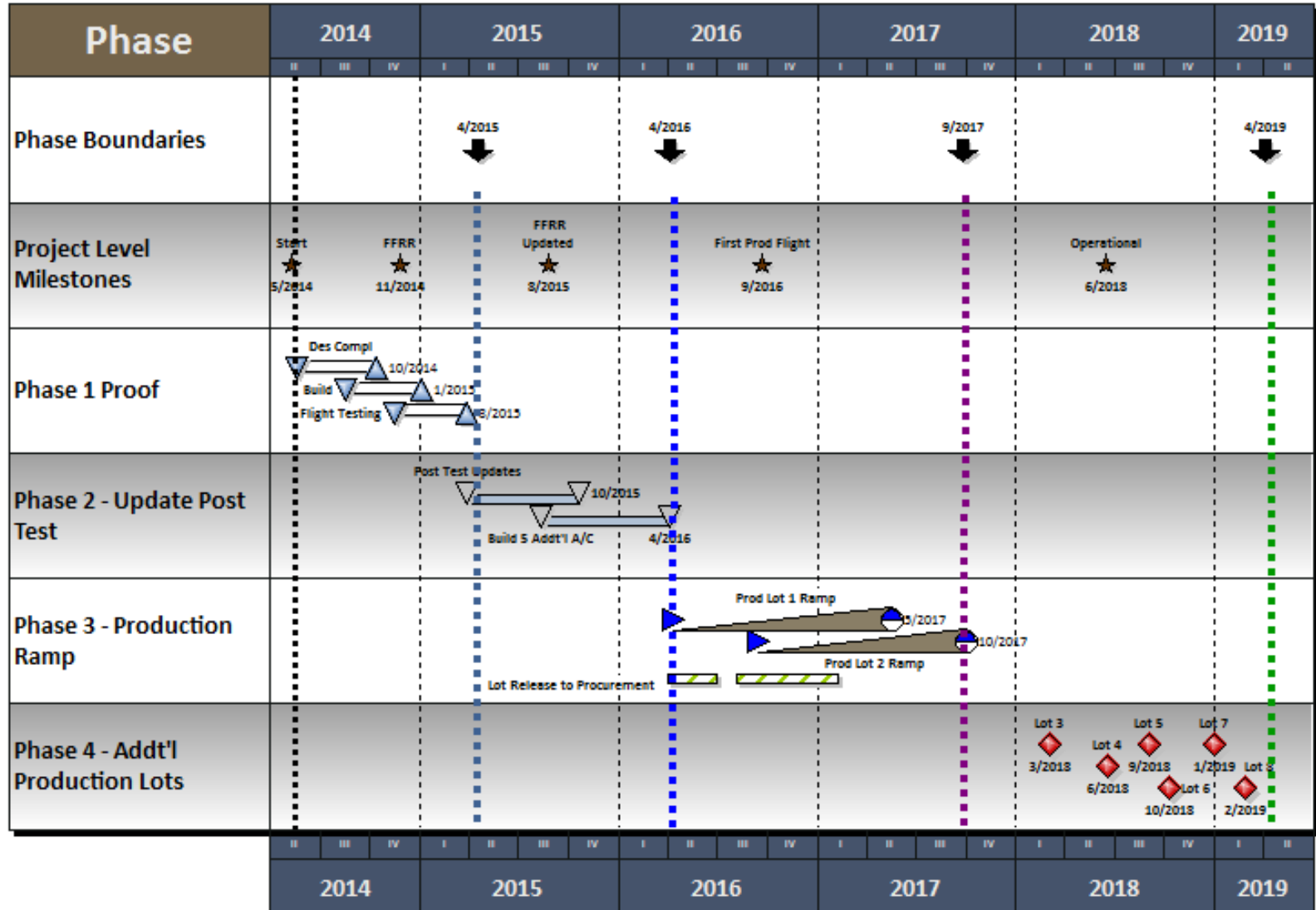
H&A Example

Functional High Level Summary



△ ▽ Key Milestones

Project Phases Example (Humphreys & Assoc 2014)



- Careful planning as shown.
- “Tagging” of tasks and/or milestones for extraction to Summary Schedule tool
- Exercise of interface to align Summary with IMS
- Update of Summary when IMS changes to identify impact of lower level changes to the Summary Plan

No real limit

- You may make any number of views your management thinks they need mechanically
- In a practical sense there is a limit to how many different views your team (people) can generate and analyze
- In any case you would produce many more views faster this way than the one or two you could hand draw in Excel or PowerPoint – and you will know your summaries and linked to the IMS

Going Forward

- Smoke out best practices from NDIA members
- Find the “universe” of tools that can do this
- Determine if additional material on this topic would be appropriate in PASEG
- Consider creating a small separate “handbook” for Executive or Top Level Schedules