



ESEIAAT



Cubesat Constellation Astrea

Project Scheduling

Degree: Aerospace Engineering

Course: Engineering Projects

Group: G4 EA-T2016

Delivery date: 22-12-2016

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Contents

1 Weekly Overviews	1
2 Weekly Gants	11

1 | Weekly Overviews

Weekly reports were generated in order to obtain the global picture of the situation.

PROJECT OVERVIEW

FRI 07/10/16 - THU 22/12/16

% COMPLETE

20%

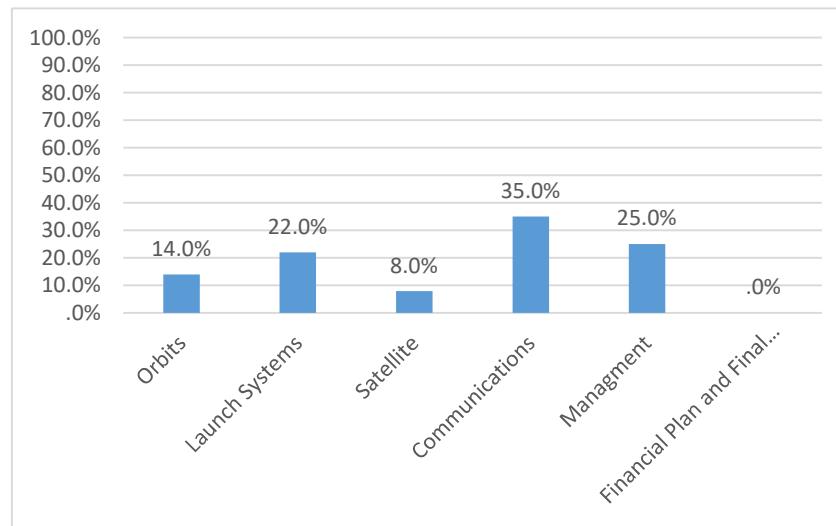
MILESTONES DUE

Milestones that are coming soon.

Name	Finish
Frozen configuration	Sun 13/11/16
FINISH	Wed 30/11/16
Project Delivery	Thu 22/12/16

% COMPLETE

Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



LATE TASKS

Tasks that are past due.

Name	Start	Finish	Duration	% Complete	Resource Names
Launch Site & Vehicle Analysis	Tue 11/10/16	Tue 25/10/16	15 days	0%	
1st Placement Strategy	Fri 07/10/16	Sun 16/10/16	10 days	75%	
PRELIMINARY DESIGN	Fri 07/10/16	Thu 20/10/16	28 hours	75%	
Study of existing protocols	Mon 17/10/16	Mon 24/10/16	6 days	25%	
Task Tracking & Schedule Docs	Fri 07/10/16	Fri 11/11/16	67 days	25%	

PROJECT OVERVIEW

FRI 07/10/16 - THU 22/12/16

% COMPLETE

38%

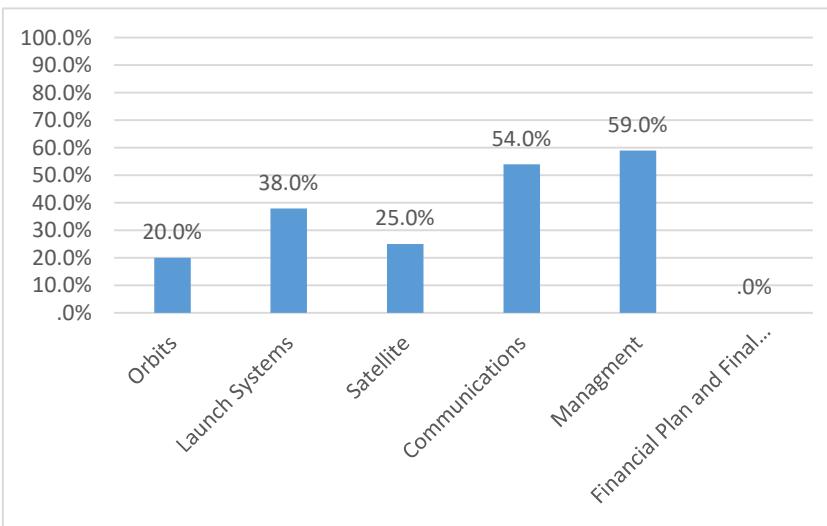
MILESTONES DUE

Milestones that are coming soon.

Name	Finish
Frozen configuration	Sun 13/11/16
Choose option	Thu 01/12/16
Choose option	Thu 01/12/16
Choose option	Tue 13/12/16
Choose option	Thu 24/11/16
Choose option	Tue 06/12/16
FINISH	Wed 14/12/16
Project Delivery	Thu 22/12/16

% COMPLETE

Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



LATE TASKS

Tasks that are past due.

Name	Start	Finish	Duration	% Complete	Resource Names
Launch Site & Vehicle Analysis	Tue 11/10/16	Tue 25/10/16	15 days	75%	
1st Placement Strategy	Fri 07/10/16	Tue 08/11/16	33 days	50%	
Study of existing protocols	Mon 17/10/16	Mon 24/10/16	6 days	75%	
Protocol definition	Tue 25/10/16	Tue 01/11/16	6 days	50%	

PROJECT OVERVIEW

FRI 07/10/16 - THU 22/12/16

% COMPLETE

59%

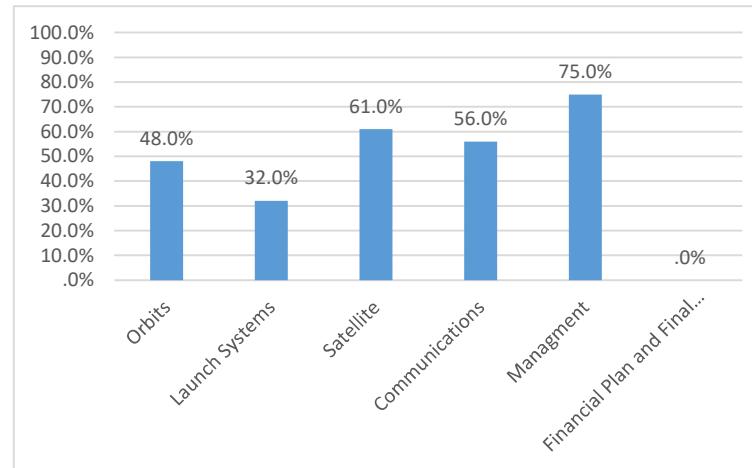
MILESTONES DUE

Milestones that are coming soon.

Name	Finish
Critical: No	Tue 13/12/16
Critical: Yes	Thu 22/12/16

% COMPLETE

Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



LATE TASKS

Tasks that are past due.

Name	Start	Finish	Duration	% Complete	Resource Names
Launch Site & Vehicle Analysis	Tue 11/10/16	Tue 25/10/16	15 days	75%	
Optimisation	Wed 26/10/16	Sun 06/11/16	12 days	75%	
Deployer	Mon 07/11/16	Thu 10/11/16	4 days	25%	
1st Placement Strategy	Fri 07/10/16	Sun 20/11/16	45 days	17%	
Spares	Wed 09/11/16	Tue 15/11/16	7 days	0%	
Structure	Wed 26/10/16	Wed 09/11/16	2 days	75%	
Thermal protection	Wed 09/11/16	Mon 21/11/16	3 days	0%	
Batteries	Wed 26/10/16	Mon 14/11/16	3 days	75%	
Requirements	Wed 26/10/16	Wed 16/11/16	4 days	50%	
Attitude Determination	Wed 26/10/16	Mon 14/11/16	3 days	75%	
Attitude control	Wed 26/10/16	Mon 14/11/16	3 days	75%	
Orbital Control	Wed 09/11/16	Thu 24/11/16	4 days	10%	
Protocol definition	Tue 25/10/16	Sun 13/11/16	14 days	50%	
Task Tracking & Schedule Docs	Fri 07/10/16	Thu 17/11/16	78,67 days	75%	

PROJECT OVERVIEW

FRI 07/10/16 - THU 22/12/16

% COMPLETE

69%

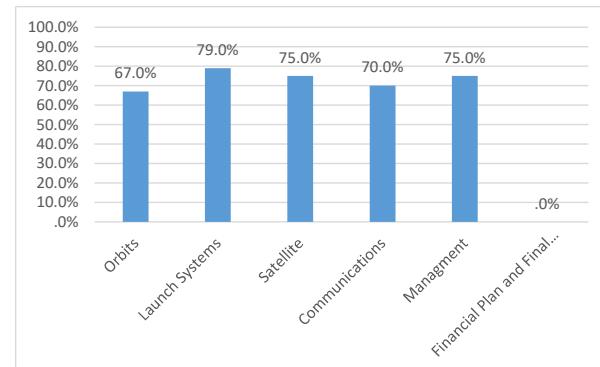
MILESTONES DUE

Milestones that are coming soon.

Name	Finish
Frozen configuration	Sun 13/11/16
Choose option	Thu 01/12/16
Choose option	Thu 01/12/16
Choose option	Tue 13/12/16
Choose option	Thu 24/11/16
Choose option	Tue 06/12/16
FINISH	Wed 14/12/16
Project Delivery	Thu 22/12/16

% COMPLETE

Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



LATE TASKS

Tasks that are past due.

Name	Start	Finish	Duration	% Complete	Resource Names
1st Placement Strategy	Fri 07/10/16	Sun 20/11/16	45 days	91%	
Spares	Wed 09/11/16	Tue 15/11/16	7 days	75%	
Thermal protection	Wed 09/11/16	Mon 21/11/16	3 days	75%	
Requirements	Wed 26/10/16	Wed 16/11/16	4 days	75%	
Attitude Determination	Wed 26/10/16	Mon 14/11/16	3 days	75%	
Attitude control	Wed 26/10/16	Mon 14/11/16	3 days	75%	
Orbital Control	Wed 09/11/16	Thu 24/11/16	4 days	50%	
Number of GS required	Mon 14/11/16	Thu 17/11/16	4 days	25%	
Systems needed	Mon 14/11/16	Fri 25/11/16	10 days	0%	
Task Tracking & Schedule Docs	Fri 07/10/16	Thu 17/11/16	78,67 days	75%	

PROJECT OVERVIEW

FRI 07/10/16 - THU 22/12/16

% COMPLETE

74%

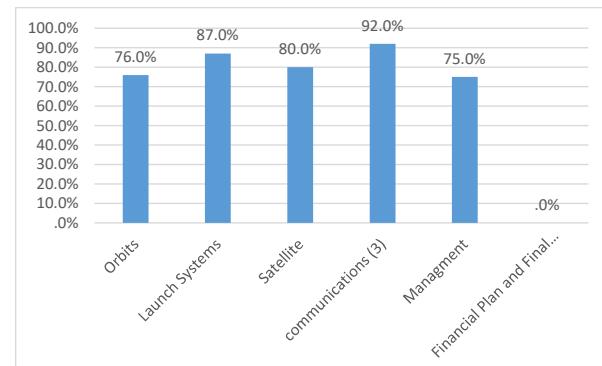
MILESTONES DUE

Milestones that are coming soon.

Name	Finish
Choose option	Thu 01/12/16
Choose option	Thu 01/12/16
Choose option	Tue 13/12/16
Choose option	Thu 24/11/16
Choose option	Tue 06/12/16
FINISH	Wed 14/12/16
Project Delivery	Thu 22/12/16

% COMPLETE

Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



LATE TASKS

Tasks that are past due.

Name	Start	Finish	Duration	% Complete	Resource Names
Spares	Wed 09/11/16	Tue 15/11/16	7 days	75%	
Thermal protection	Wed 09/11/16	Mon 21/11/16	3 days	75%	
Requirements	Wed 26/10/16	Wed 16/11/16	4 days	75%	
Comercial availability	Mon 07/11/16	Thu 24/11/16	5 days	95%	
Choose option	Thu 24/11/16	Thu 24/11/16	0 days	0%	
Attitude Determination	Wed 26/10/16	Mon 14/11/16	3 days	75%	
Attitude control	Wed 26/10/16	Mon 14/11/16	3 days	75%	
Orbital Control	Wed 09/11/16	Thu 24/11/16	4 days	50%	
Comercial availability	Wed 09/11/16	Tue 06/12/16	7 days	50%	
Systems needed	Mon 14/11/16	Fri 25/11/16	10 days	75%	
Meeting Documents	Fri 07/10/16	Thu 08/12/16	120 days	75%	
Task Tracking & Schedule Docs	Fri 07/10/16	Thu 17/11/16	78,67 days	75%	

PROJECT OVERVIEW

FRI 07/10/16 - THU 22/12/16

% COMPLETE

83%

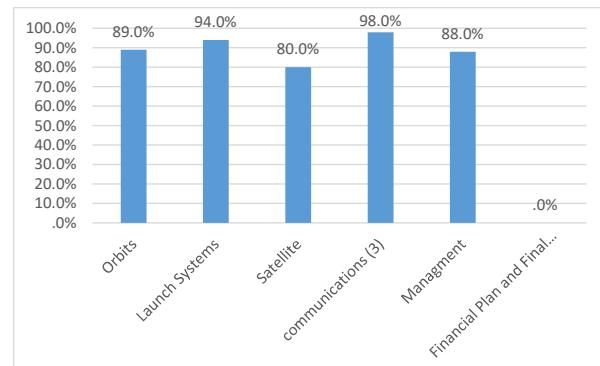
MILESTONES DUE

Milestones that are coming soon.

Name	Finish
Choose option	Thu 01/12/16
Choose option	Thu 01/12/16
Choose option	Tue 13/12/16
Choose option	Thu 24/11/16
Choose option	Tue 06/12/16
FINISH	Wed 14/12/16
Project Delivery	Thu 22/12/16

% COMPLETE

Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



LATE TASKS

Tasks that are past due.

Name	Start	Finish	Duration	% Complete	Resource Names
Spares	Wed 09/11/16	Tue 15/11/16	7 days	75%	
Thermal protection	Wed 09/11/16	Mon 21/11/16	3 days	75%	
Comercial availability	Mon 21/11/16	Thu 01/12/16	3 days	50%	
Choose option	Thu 01/12/16	Thu 01/12/16	0 days	0%	
Comercial availability	Mon 14/11/16	Thu 01/12/16	5 days	75%	
Choose option	Thu 01/12/16	Thu 01/12/16	0 days	0%	
Requirements	Wed 26/10/16	Wed 16/11/16	4 days	75%	
Comercial availability	Mon 07/11/16	Thu 24/11/16	5 days	95%	
Choose option	Thu 24/11/16	Thu 24/11/16	0 days	0%	
Attitude Determination	Wed 26/10/16	Mon 14/11/16	3 days	75%	
Attitude control	Wed 26/10/16	Mon 14/11/16	3 days	75%	
Orbital Control	Wed 09/11/16	Thu 24/11/16	4 days	50%	
Comercial availability	Wed 09/11/16	Tue 06/12/16	7 days	50%	
Estimation of the cost	Mon 28/11/16	Thu 01/12/16	4 days	75%	
Meeting Documents	Fri 07/10/16	Thu 08/12/16	120 days	88%	
Task Tracking & Schedule Docs	Fri 07/10/16	Thu 17/11/16	78,67 days	88%	

PROJECT OVERVIEW

FRI 07/10/16 - THU 22/12/16

% COMPLETE

86%

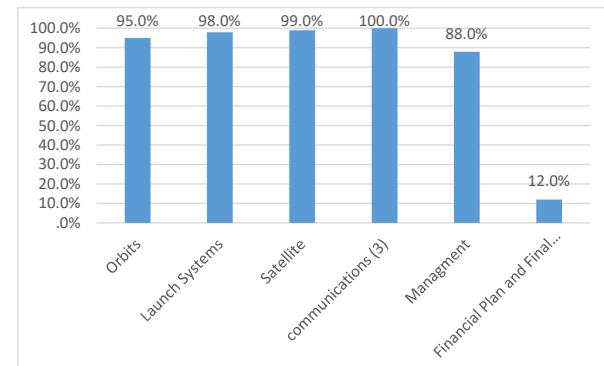
MILESTONES DUE

Milestones that are coming soon.

Name	Finish
Choose option	Thu 01/12/16
Choose option	Thu 01/12/16
Choose option	Tue 13/12/16
Choose option	Thu 24/11/16
Choose option	Tue 06/12/16
FINISH	Wed 14/12/16
Project Delivery	Thu 22/12/16

% COMPLETE

Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



LATE TASKS

Tasks that are past due.

Name	Start	Finish	Duration	% Complete	Resource Names
Spares	Wed 09/11/16	Tue 15/11/16	7 days	75%	
Choose option	Thu 01/12/16	Thu 01/12/16	0 days	0%	
Choose option	Thu 01/12/16	Thu 01/12/16	0 days	0%	
Choose option	Thu 24/11/16	Thu 24/11/16	0 days	0%	
Choose option	Tue 06/12/16	Tue 06/12/16	0 days	0%	
Meeting Documents	Fri 07/10/16	Thu 08/12/16	120 days	88%	
Task Tracking & Schedule Docs	Fri 07/10/16	Thu 17/11/16	78,67 days	88%	

PROJECT OVERVIEW

FRI 07/10/16 - THU 22/12/16

% COMPLETE

97%

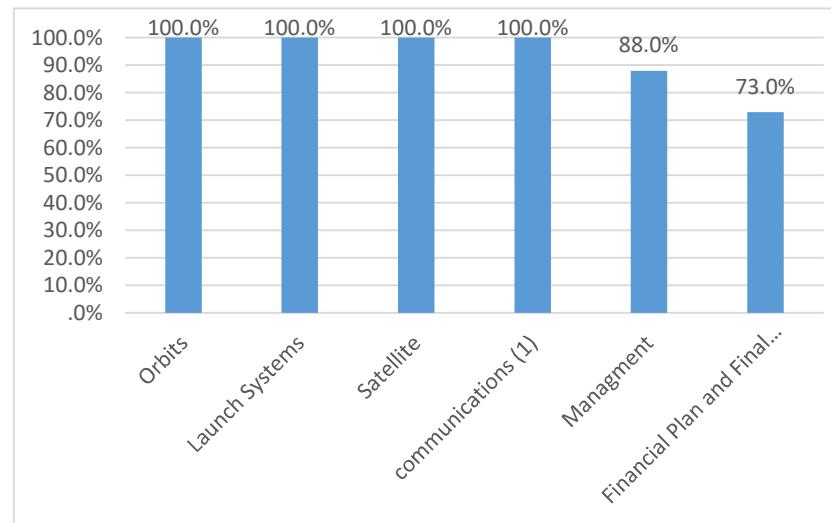
MILESTONES DUE

Milestones that are coming soon.

Name	Finish
Project Delivery	Thu 22/12/16

% COMPLETE

Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



LATE TASKS

Tasks that are past due.

Name	Start	Finish	Duration	% Complete	Resource Names
Meeting Documents	Fri 07/10/16	Thu 08/12/16	120 days	91%	
Task Tracking & Schedule Docs	Fri 07/10/16	Fri 11/11/16	67 days	84%	
PROJECT EXHIBITION	Wed 14/12/16	Thu 22/12/16	18,67 days	27%	

PROJECT OVERVIEW

FRI 07/10/16 - THU 22/12/16

% COMPLETE

99%

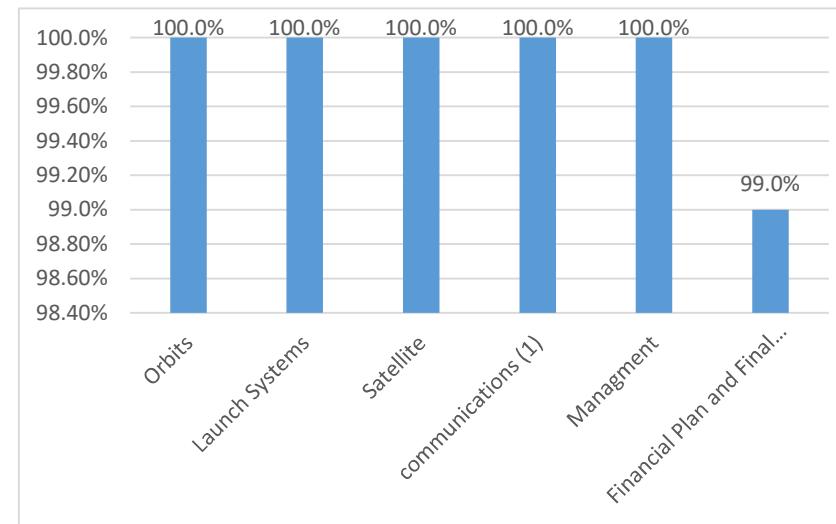
MILESTONES DUE

Milestones that are coming soon.

Name	Finish
Project Delivery	Thu 22/12/16

% COMPLETE

Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



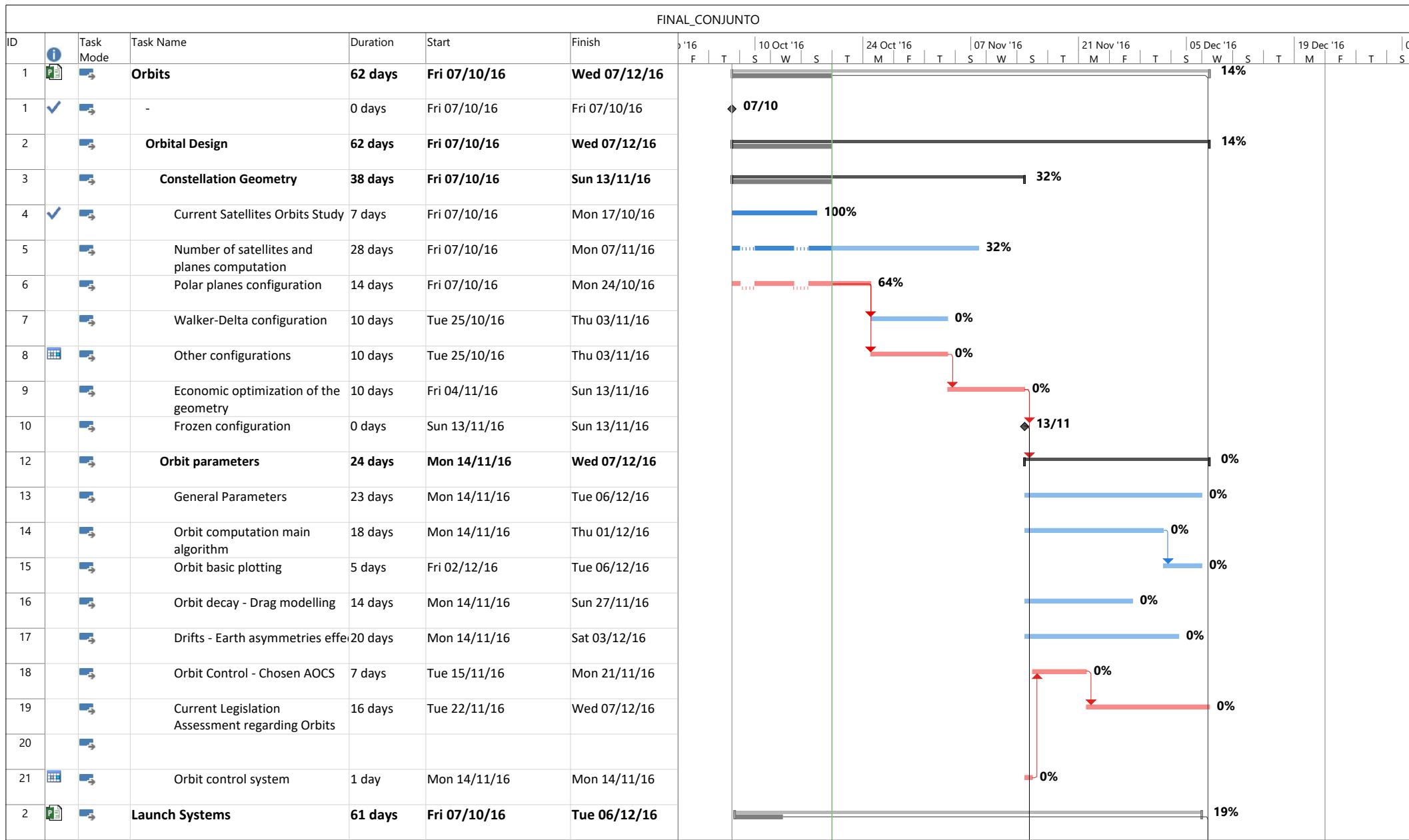
LATE TASKS

Tasks that are past due.

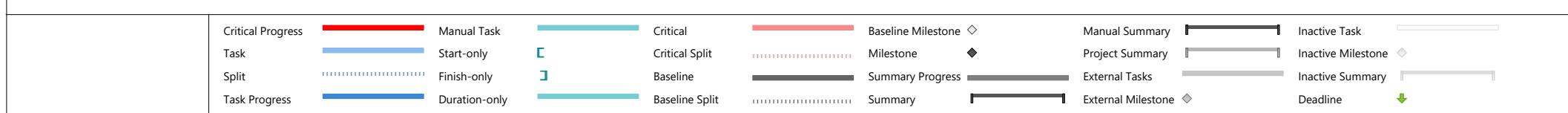
Name	Start	Finish	Duration	% Complete	Resource Names

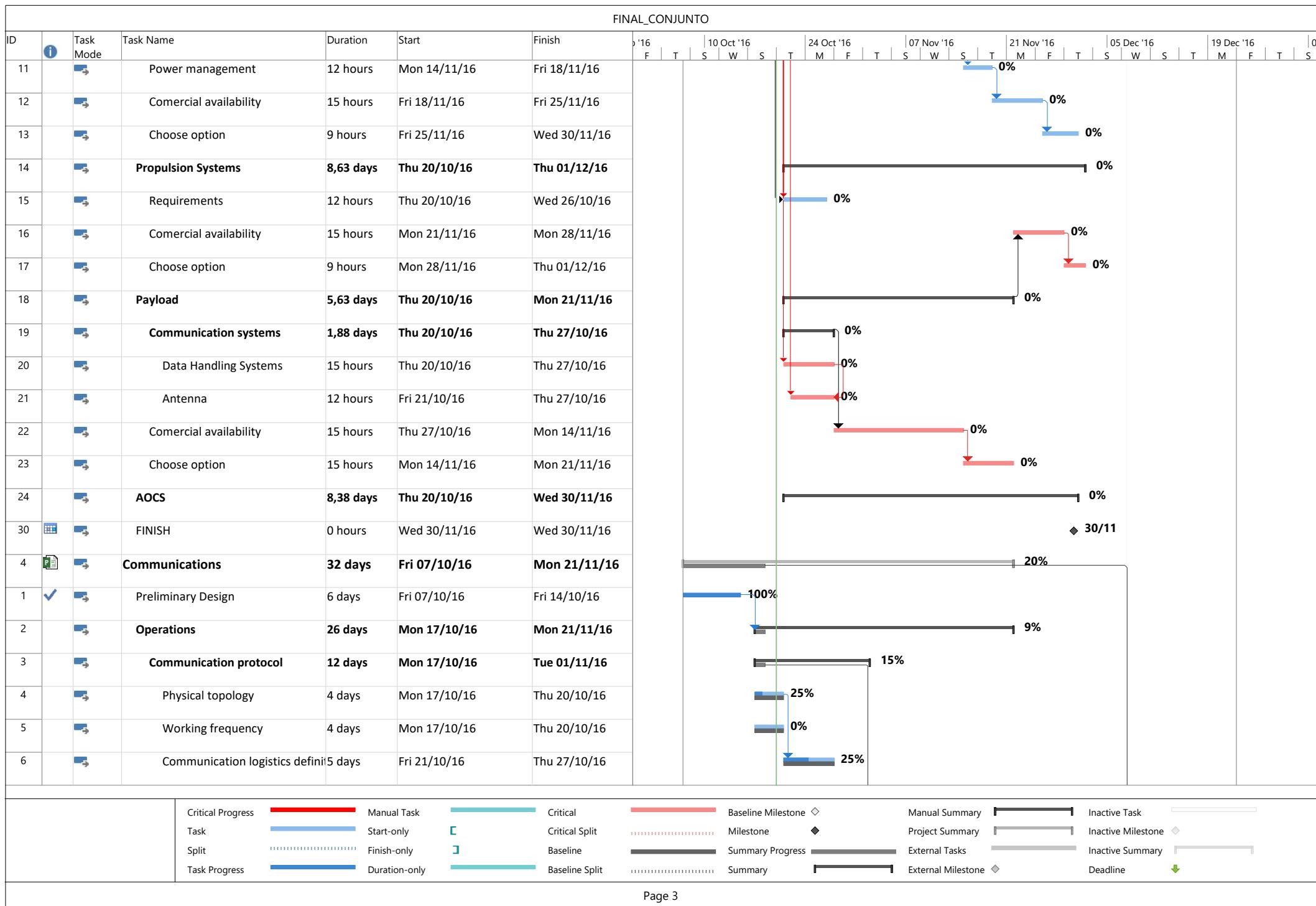
2 | Weekly Gants

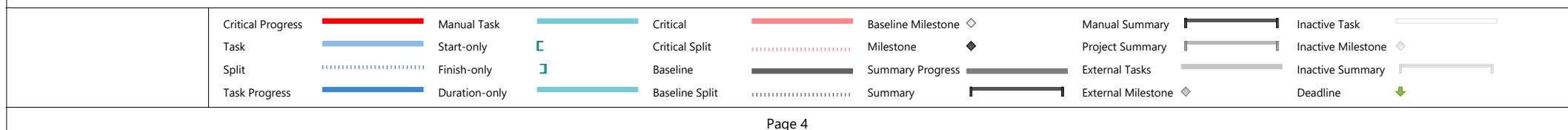
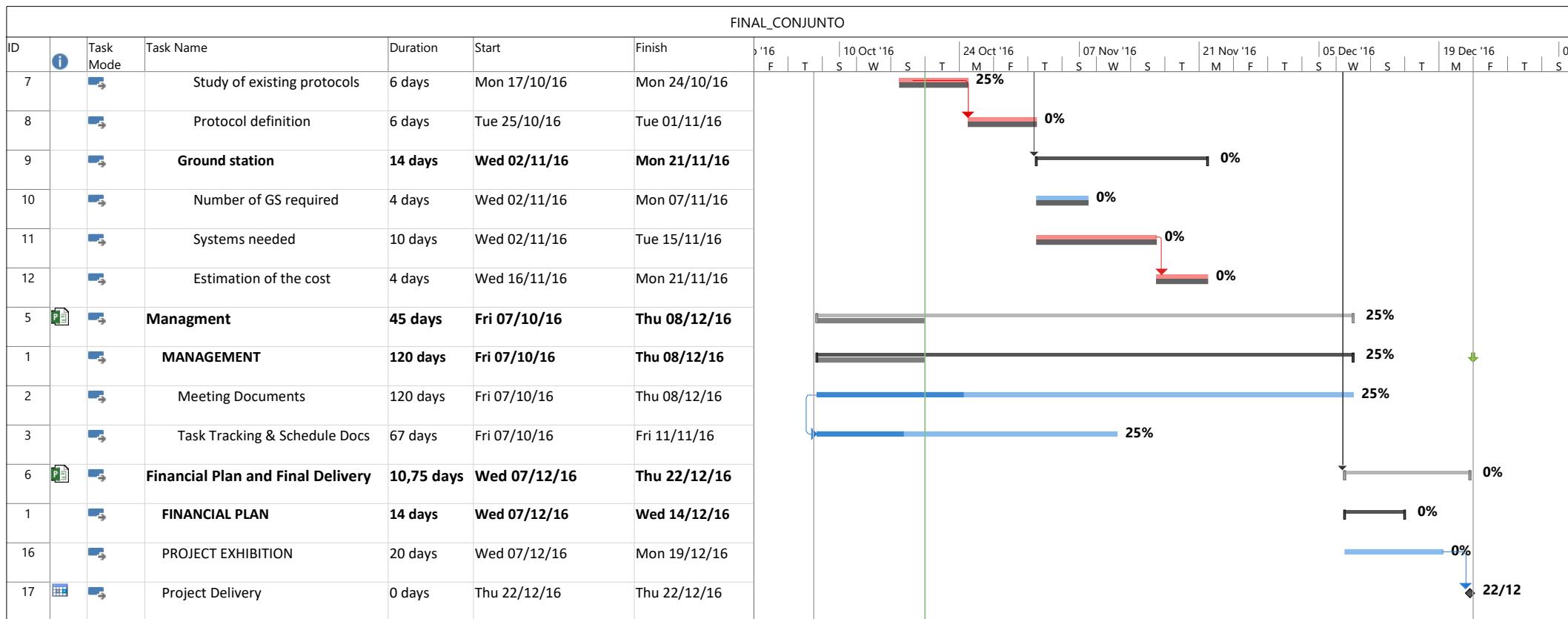
Each coordinator kept track of his/her department Scheduling in a modular Gant, which at the same time was coordinated by the project's coordinator.

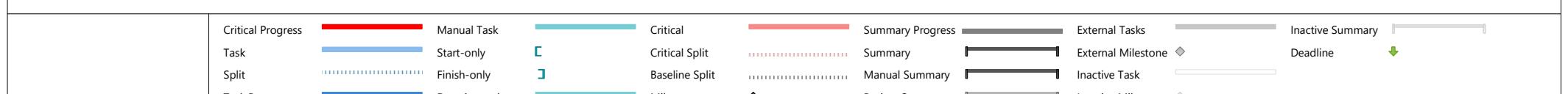


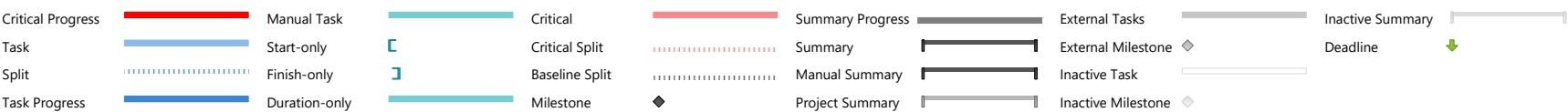
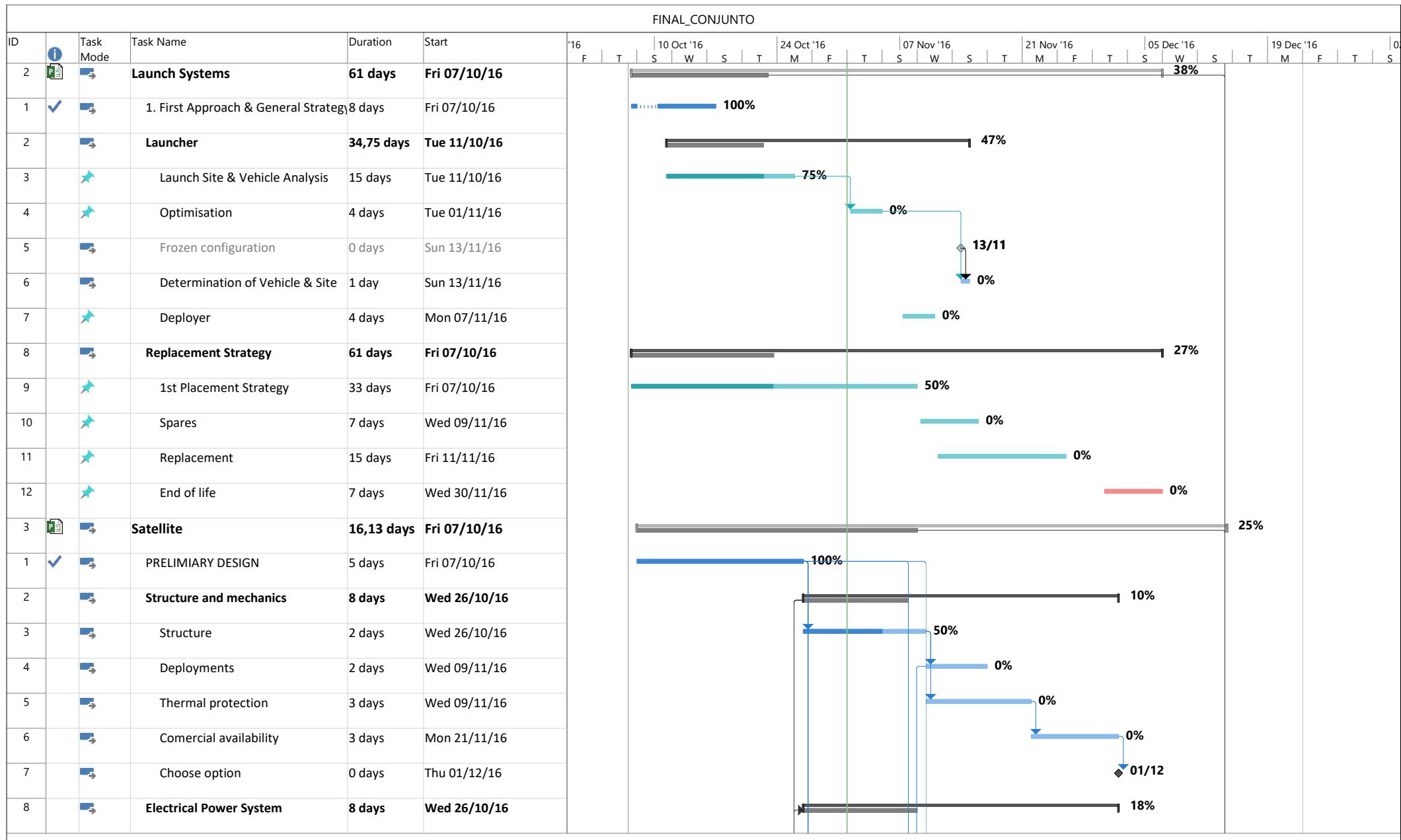
FINAL_CONJUNTO											
ID	Task Mode	Task Name	Duration	Start	Finish	10 Oct '16 F T S W S T	24 Oct '16 M F T S T	07 Nov '16 S W S T	21 Nov '16 M F T S T	05 Dec '16 S W S T	19 Dec '16 M F T S T
1	➡	1. First Approach & General Strategy	8 days	Fri 07/10/16	Sun 16/10/16	75%					
2	➡	Launcher	34,75 days	Tue 11/10/16	Mon 14/11/16						
3	➡	Launch Site & Vehicle Analysis	15 days	Tue 11/10/16	Tue 25/10/16						
4	➡	Optimisation	4 days	Tue 01/11/16	Fri 04/11/16						
6	➡	Determination of Vehicle & Site	1 day	Sun 13/11/16	Mon 14/11/16						
7	➡	Deployer	4 days	Mon 07/11/16	Thu 10/11/16						
8	➡	Replacement Strategy	61 days	Fri 07/10/16	Tue 06/12/16						19%
9	➡	1st Placement Strategy	10 days	Fri 07/10/16	Sun 16/10/16	75%					
10	➡	Spares	7 days	Wed 09/11/16	Tue 15/11/16						0%
11	➡	Replacement	15 days	Fri 11/11/16	Fri 25/11/16						0%
12	➡	End of life	7 days	Wed 30/11/16	Tue 06/12/16						0%
3	➡	Satellite	12,13 days	Fri 07/10/16	Thu 01/12/16						8%
1	➡	PRELIMIARY DESIGN	28 hours	Fri 07/10/16	Thu 20/10/16						
2	➡	Structure and mechanics	4,88 days	Thu 20/10/16	Thu 17/11/16						
3	➡	Structure	6 hours	Thu 20/10/16	Mon 24/10/16						
4	➡	Deployments	6 hours	Mon 24/10/16	Wed 26/10/16						
5	➡	Thermal protection	9 hours	Wed 26/10/16	Wed 09/11/16						
6	➡	Comercial availability	12 hours	Wed 09/11/16	Tue 15/11/16						
7	➡	Choose option	6 hours	Tue 15/11/16	Thu 17/11/16						
8	➡	Electrical Power System	5,63 days	Wed 09/11/16	Wed 30/11/16						
9	➡	Solar arrays	9 hours	Wed 09/11/16	Mon 14/11/16						
10	➡	Batteries	9 hours	Wed 09/11/16	Mon 14/11/16						

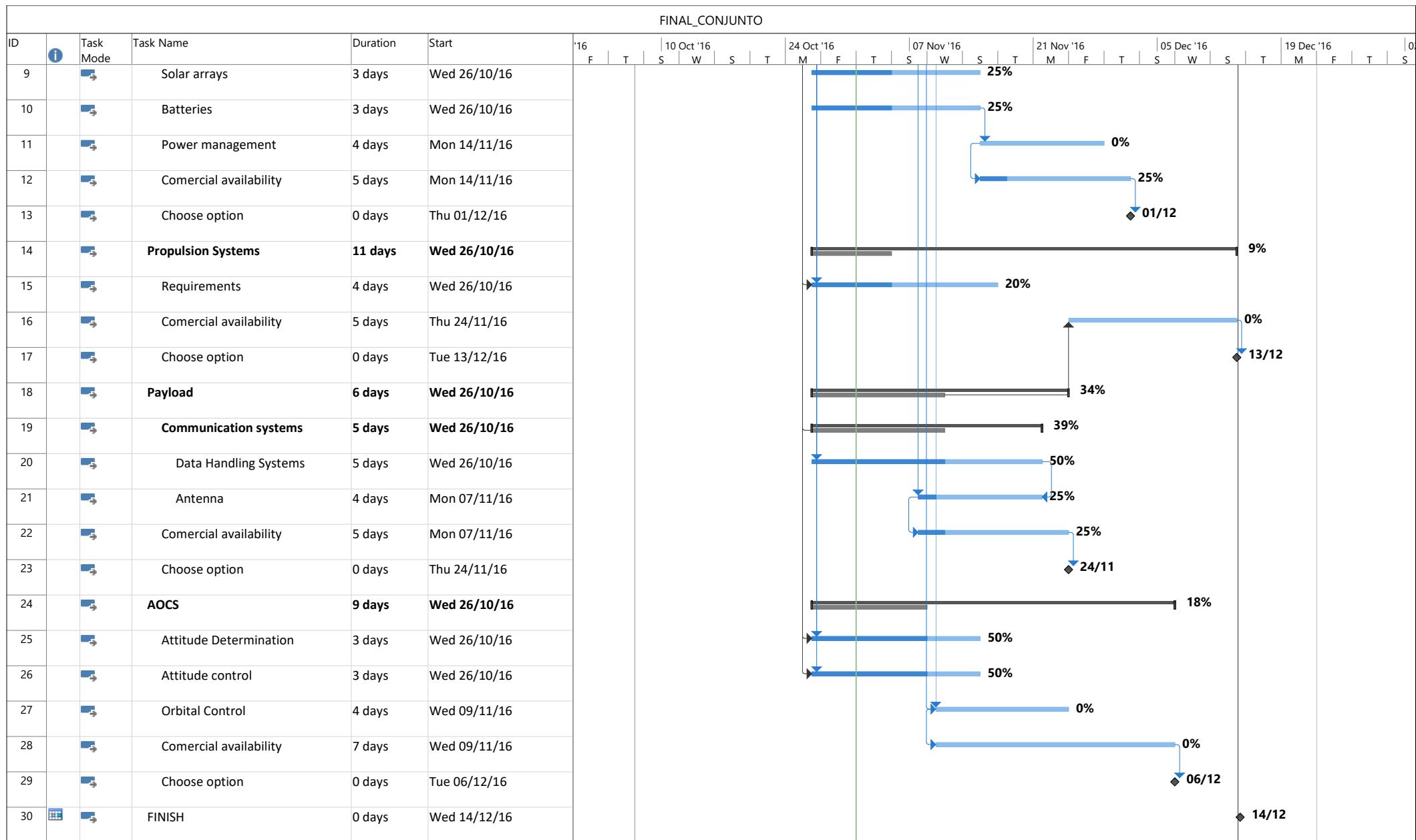


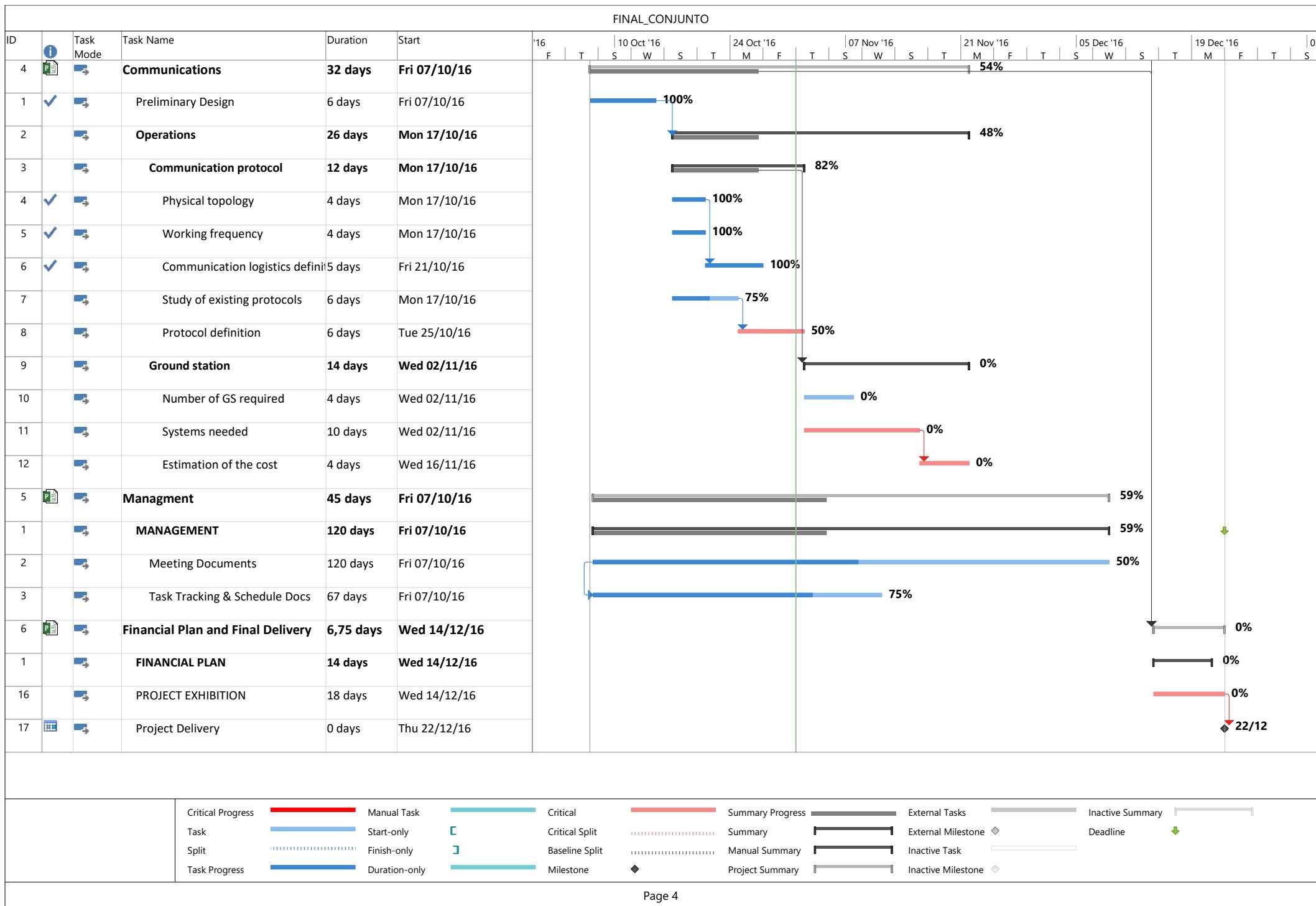












FINAL_CONJUNTO

02 Jan '17 S	W	S	T	16 Jan '17 M	F	T	S	30 Jan '17 S	W	S	T	13 Feb '17 M	F	T	S	27 Feb '17 M	F	T	S	13 Mar '17 M	F	T	S	27 Mar '17 M	W	S	T	10 Apr '17 M	F	T	S	24 Apr '17 W	S	T	08 May '17 M	F	T	S	22 May '17 W	S	T	05 Ju M
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Critical Progress		Manual Task		Critical		Summary Progress		External Tasks		Inactive Summary	
Task		Start-only		Critical Split		Summary		External Milestone		Deadline	
Split		Finish-only		Baseline Split		Manual Summary		Inactive Task			
Task Progress		Duration-only		Milestone		Project Summary		Inactive Milestone			

FINAL_CONJUNTO

02 Jan '17 S	W	S	T	16 Jan '17 M	F	T	S	30 Jan '17 S	W	S	T	13 Feb '17 M	F	T	S	27 Feb '17 M	F	T	S	13 Mar '17 M	F	T	S	27 Mar '17 M	W	S	T	10 Apr '17 M	F	T	S	24 Apr '17 W	S	T	08 May '17 M	F	T	S	22 May '17 W	S	T	05 Ju M
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Critical Progress		Manual Task		Critical		Summary Progress		External Tasks		Inactive Summary	
Task		Start-only		Critical Split		Summary		External Milestone		Deadline	
Split		Finish-only		Baseline Split		Manual Summary		Inactive Task			
Task Progress		Duration-only		Milestone		Project Summary		Inactive Milestone			

FINAL_CONJUNTO

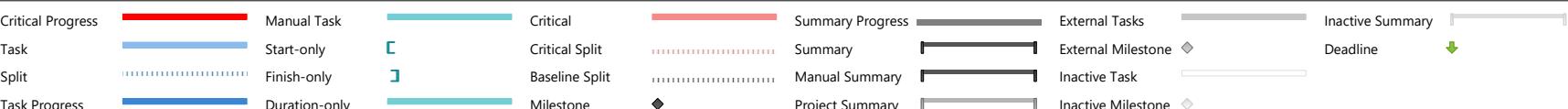
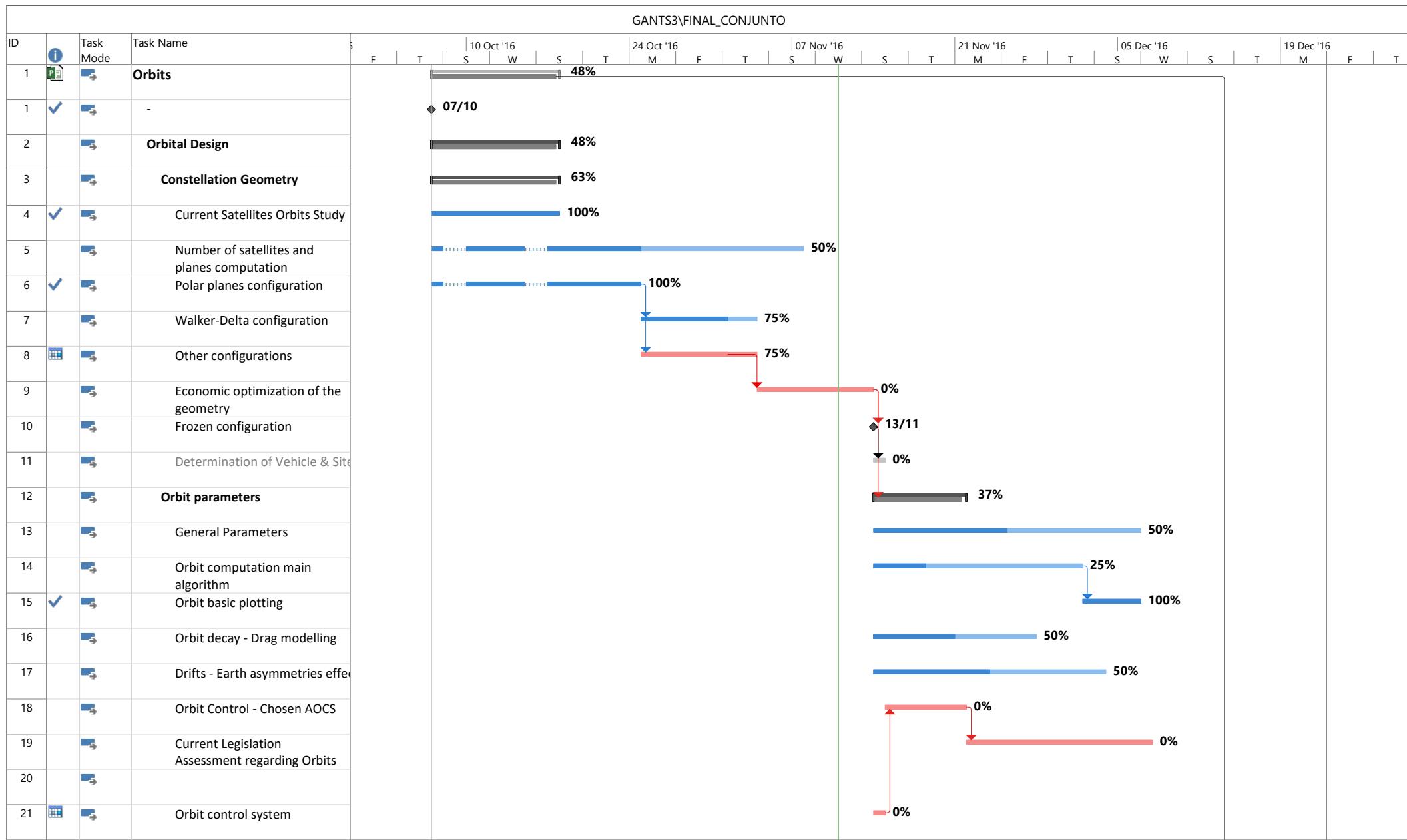
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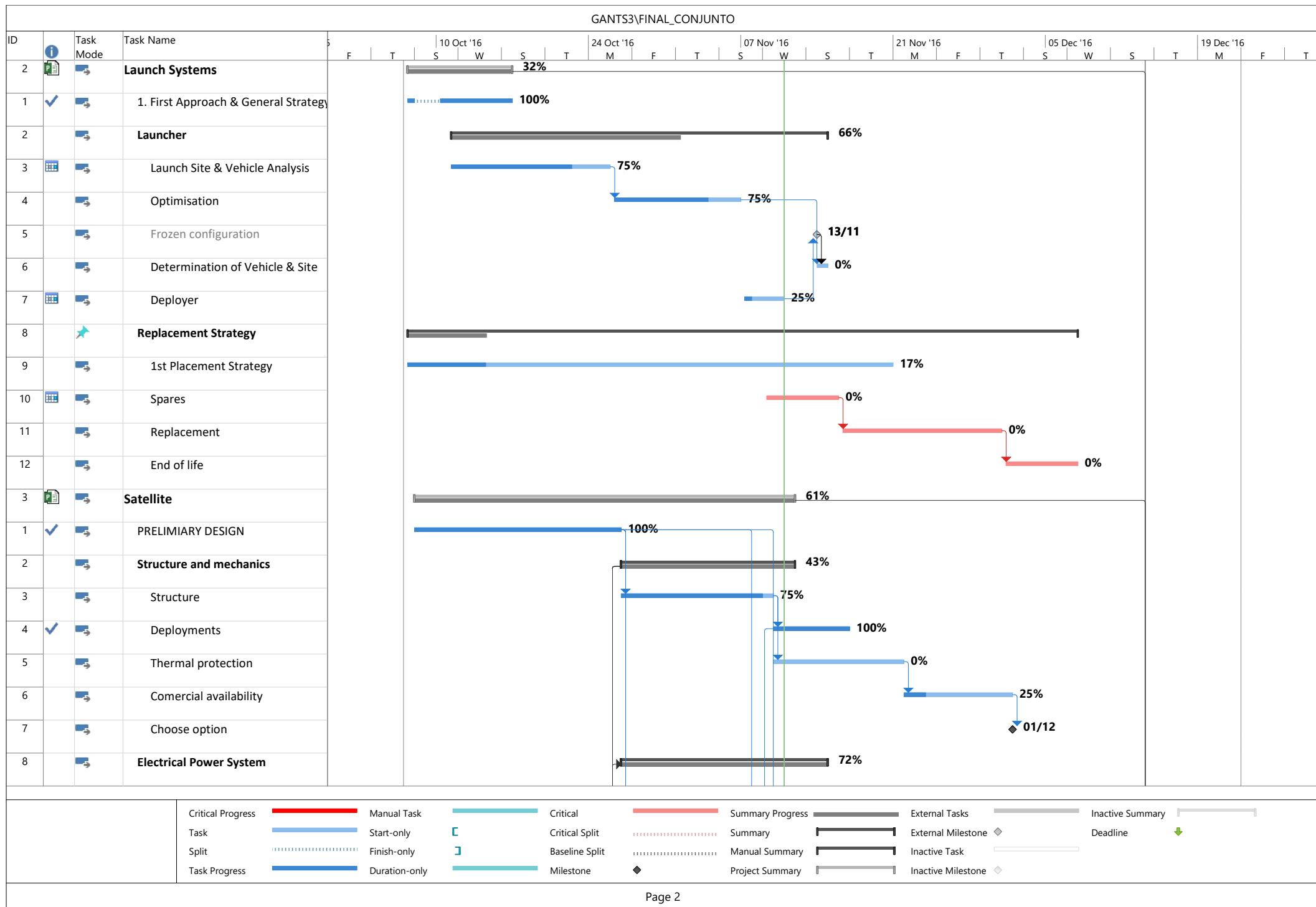
Critical Progress		Manual Task		Critical		Summary Progress		External Tasks		Inactive Summary	
Task		Start-only		Critical Split		Summary		External Milestone		Deadline	
Split		Finish-only		Baseline Split		Manual Summary		Inactive Task			
Task Progress		Duration-only		Milestone		Project Summary		Inactive Milestone			

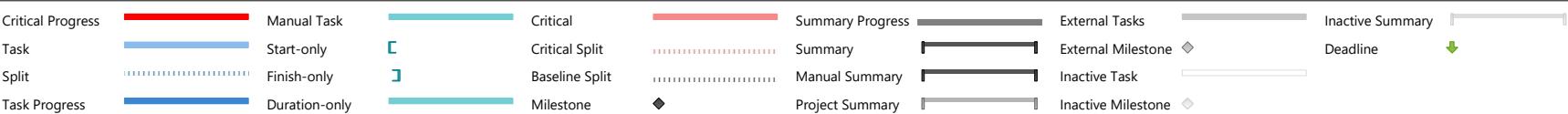
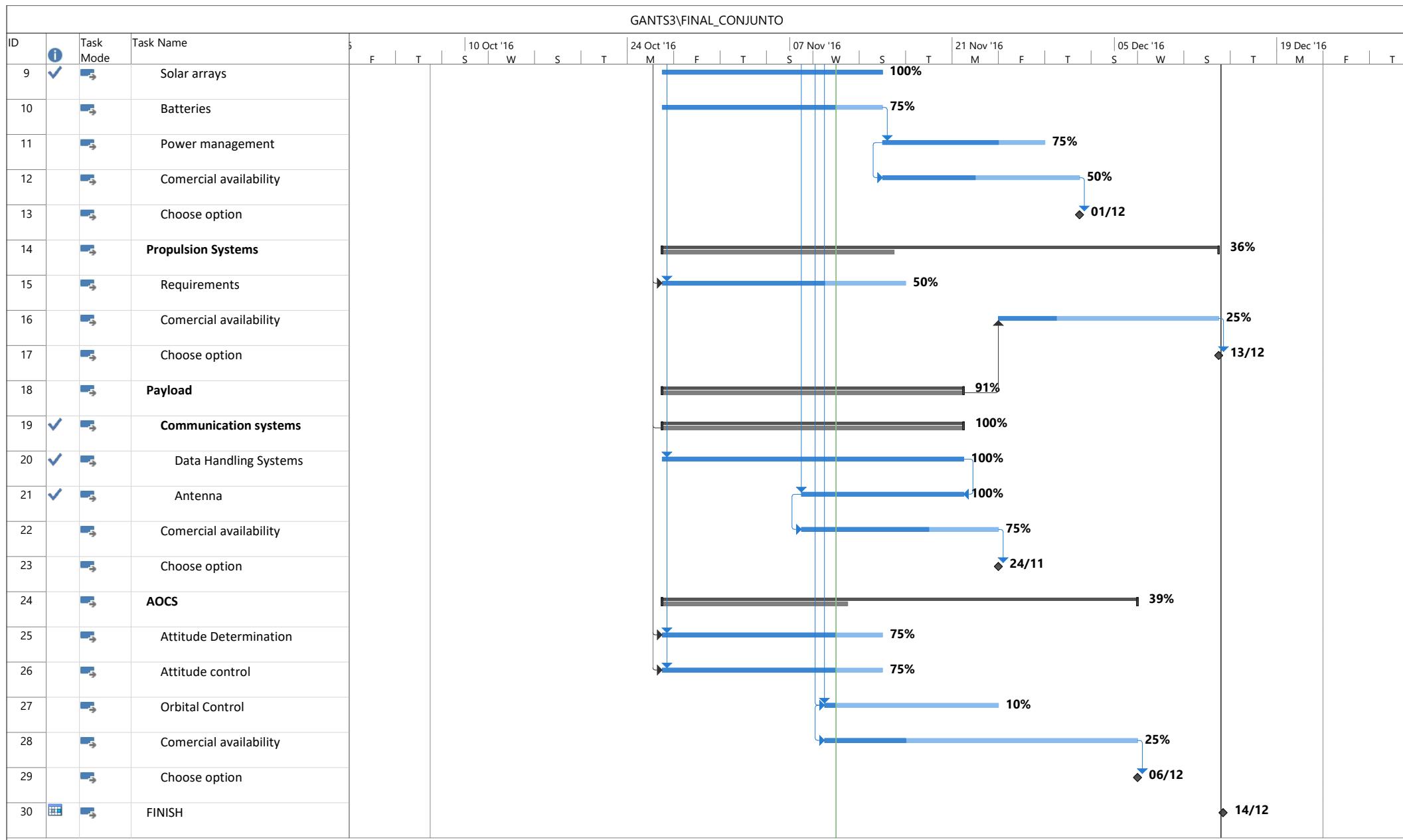
FINAL_CONJUNTO

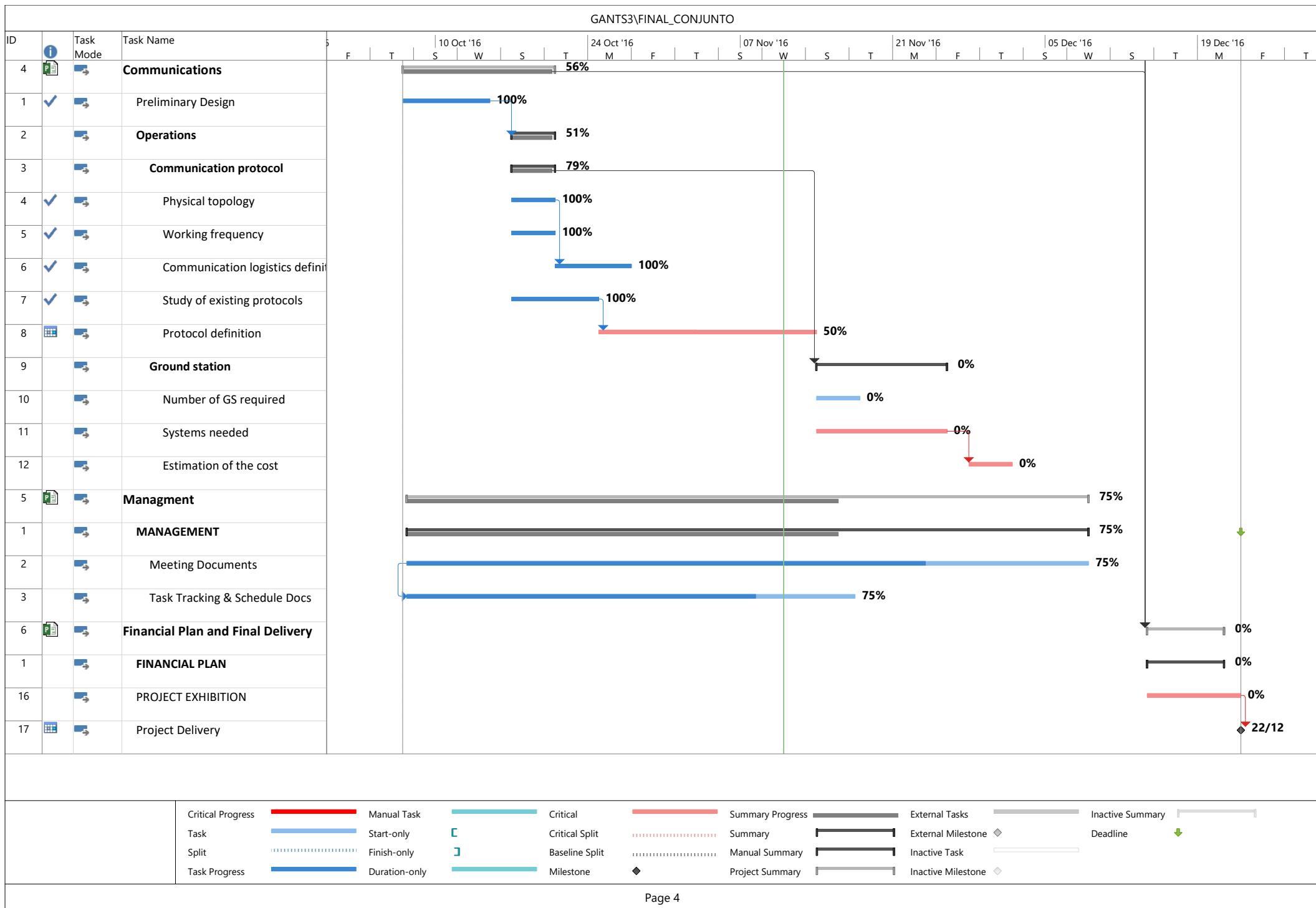
02 Jan '17 S	W	S	T	16 Jan '17 M	F	T	S	30 Jan '17 S	W	S	T	13 Feb '17 M	F	T	S	27 Feb '17 M	F	T	S	13 Mar '17 M	F	T	S	27 Mar '17 M	W	S	T	10 Apr '17 M	F	T	S	24 Apr '17 W	S	T	08 May '17 M	F	T	S	22 May '17 W	S	T	05 Ju M
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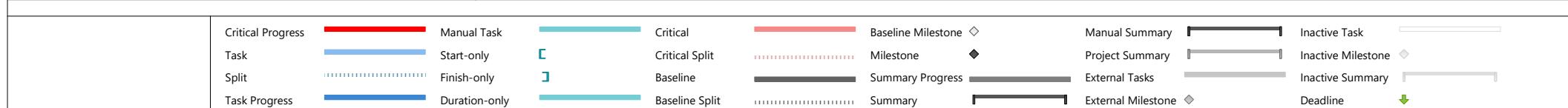
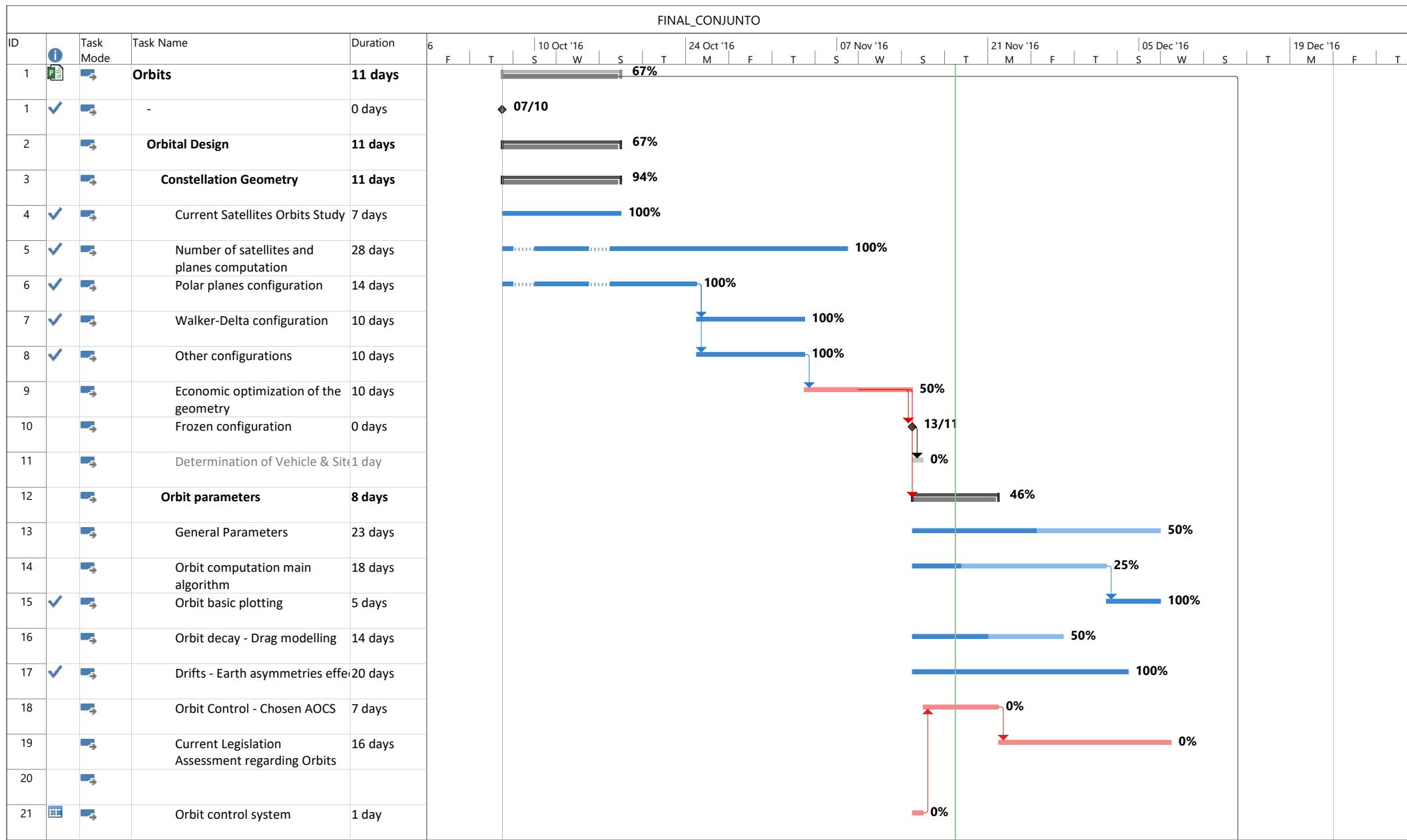


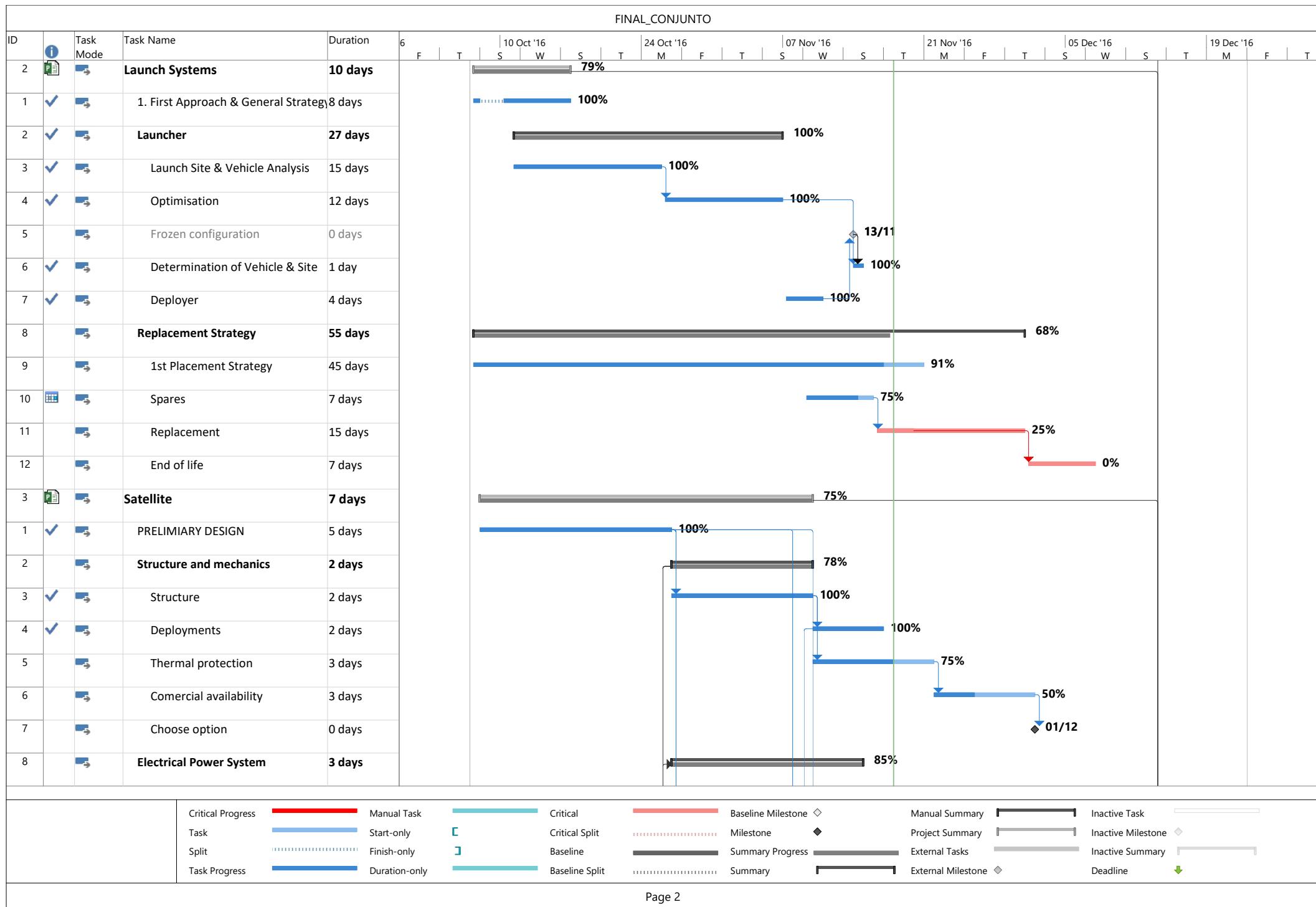


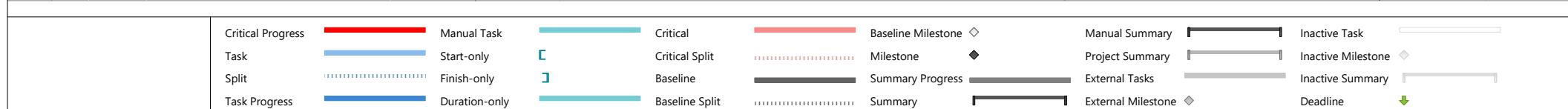
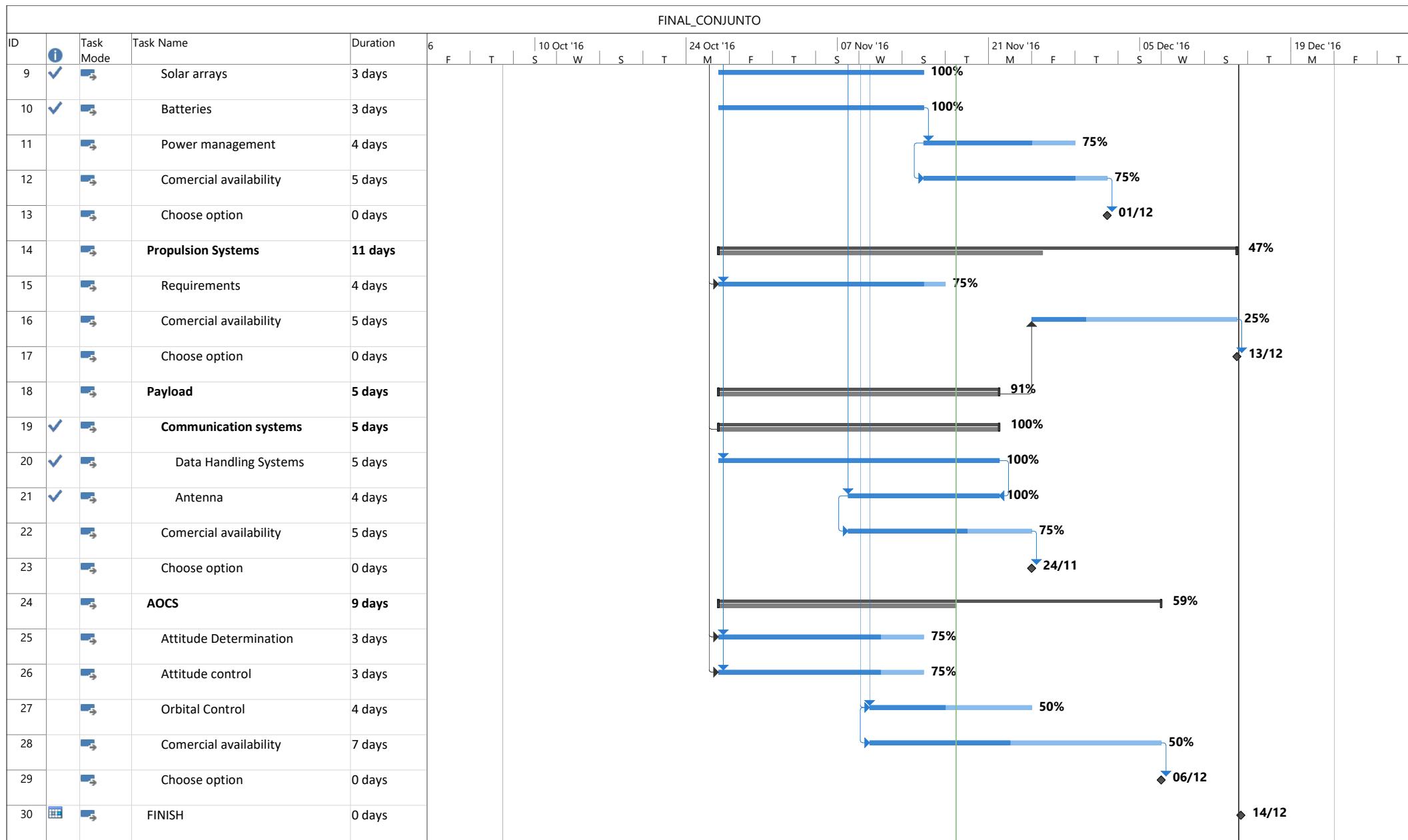


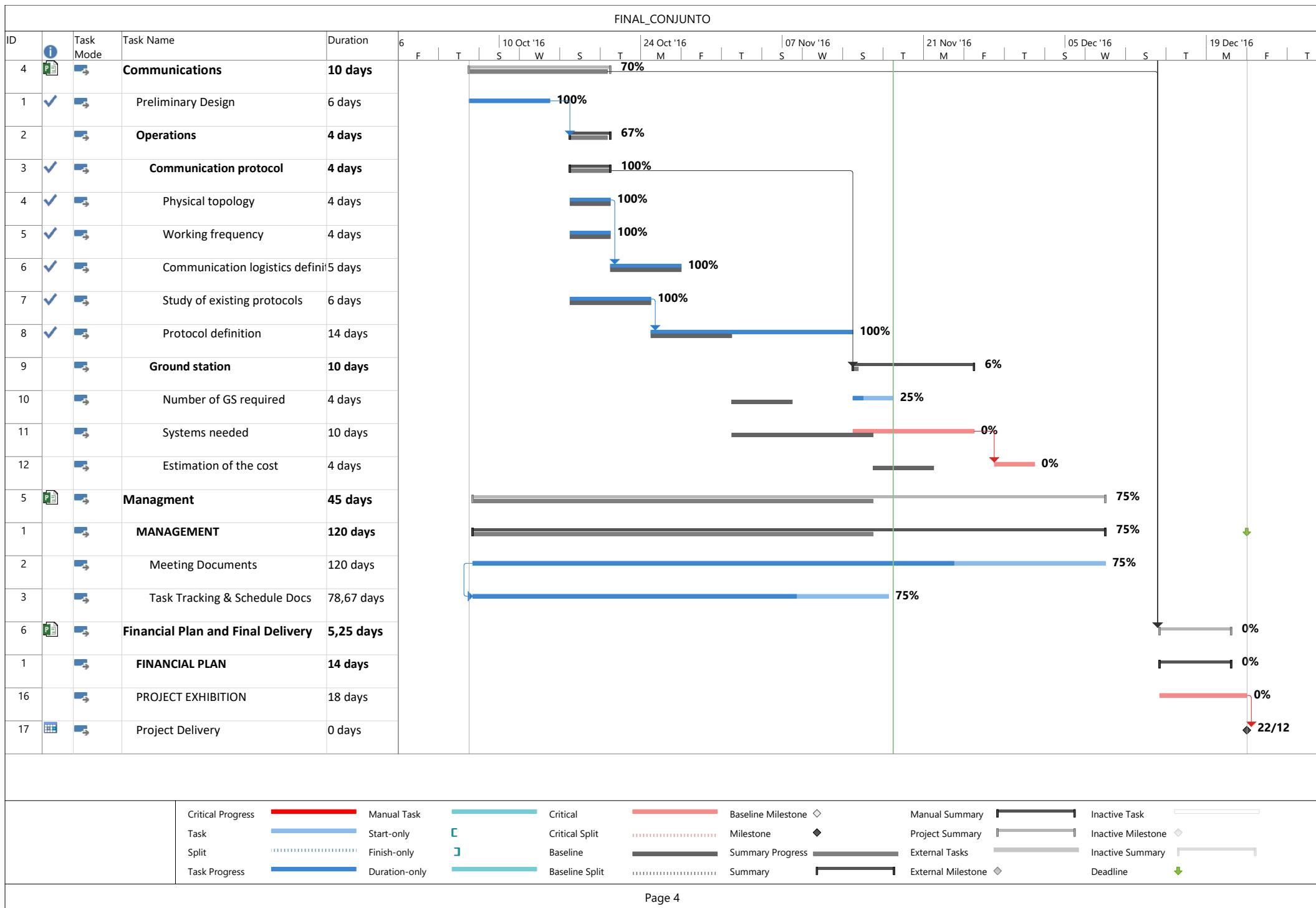


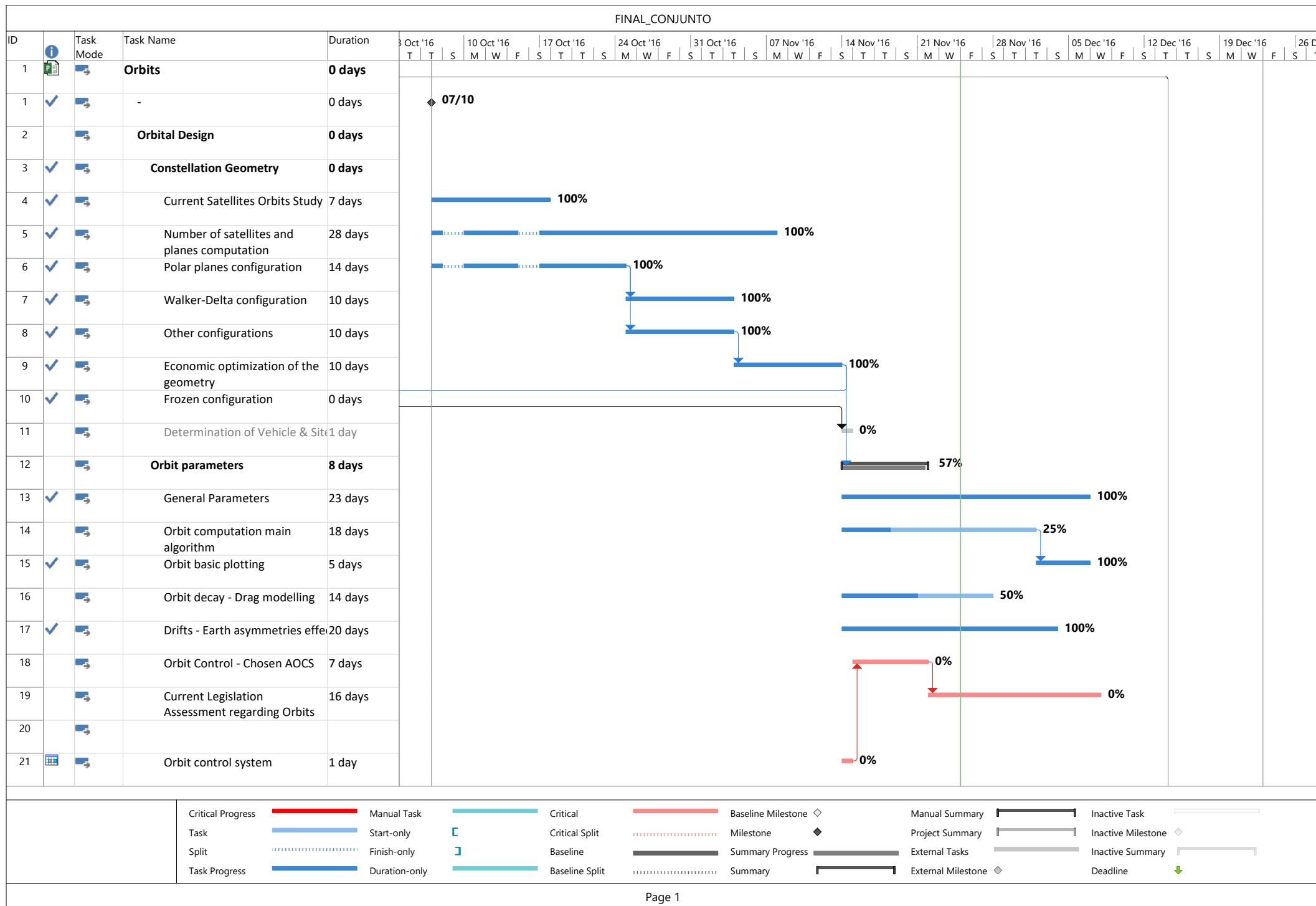


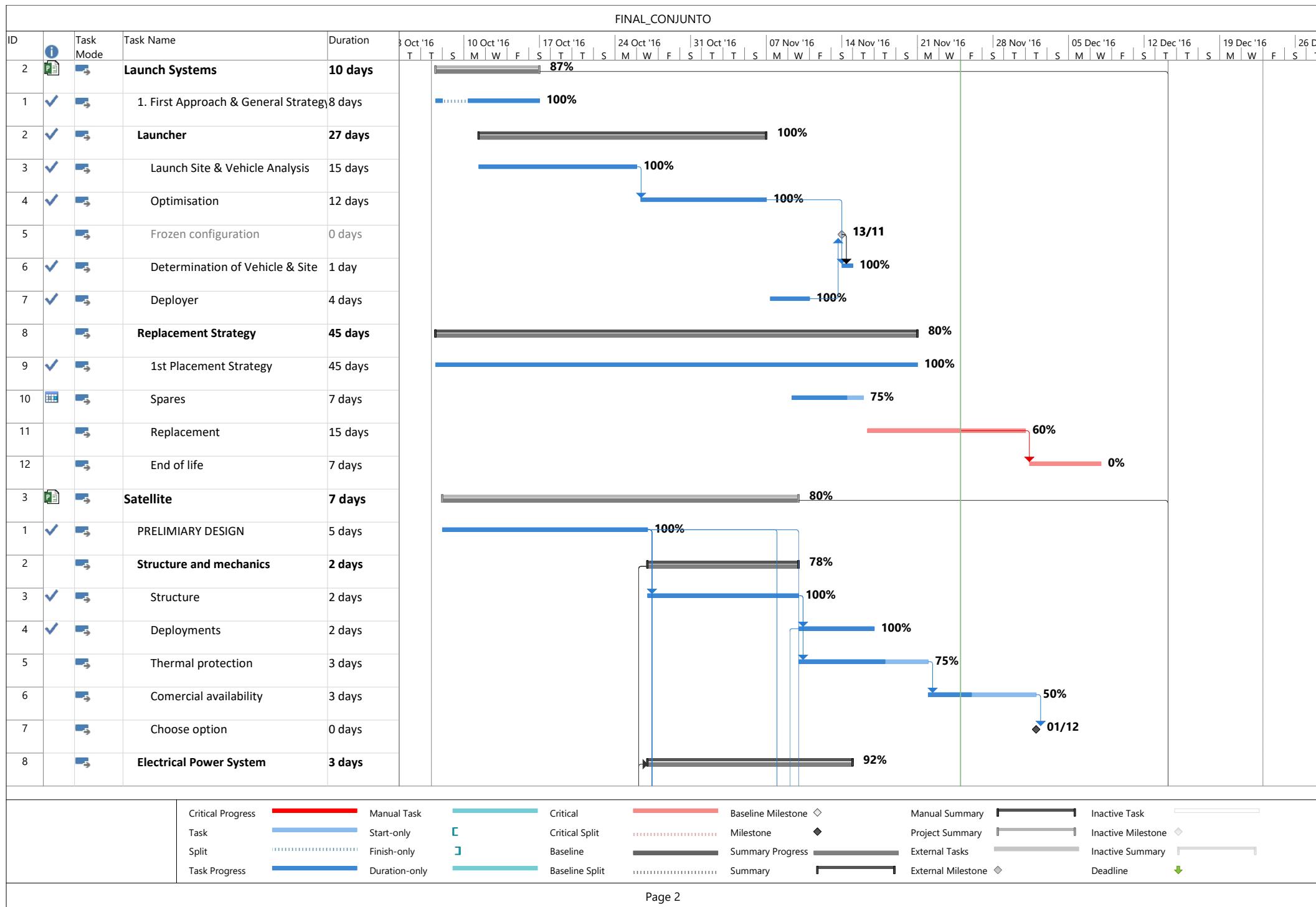


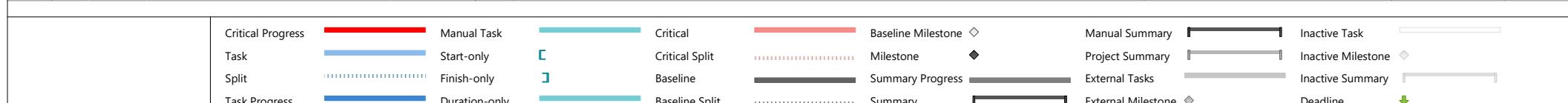
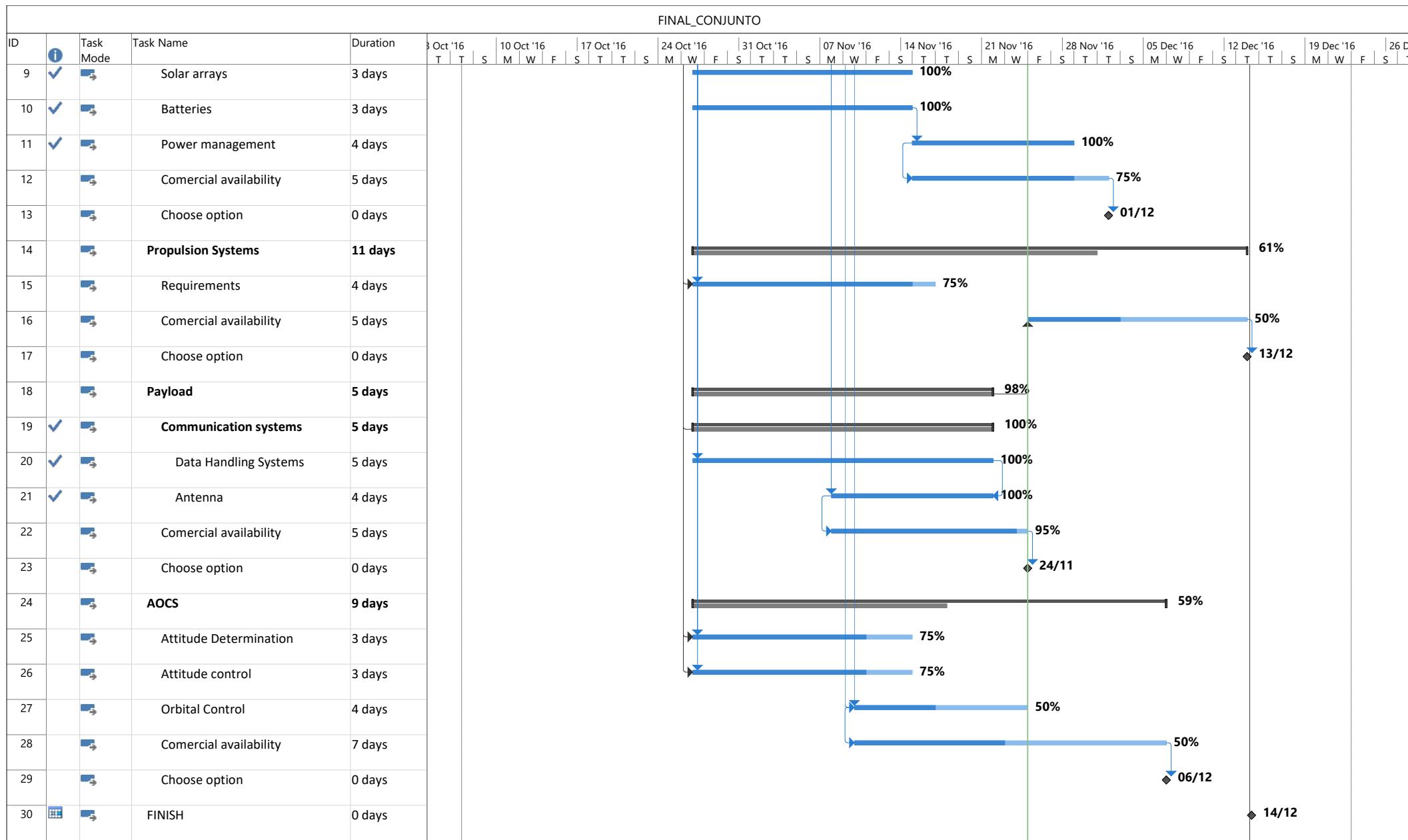


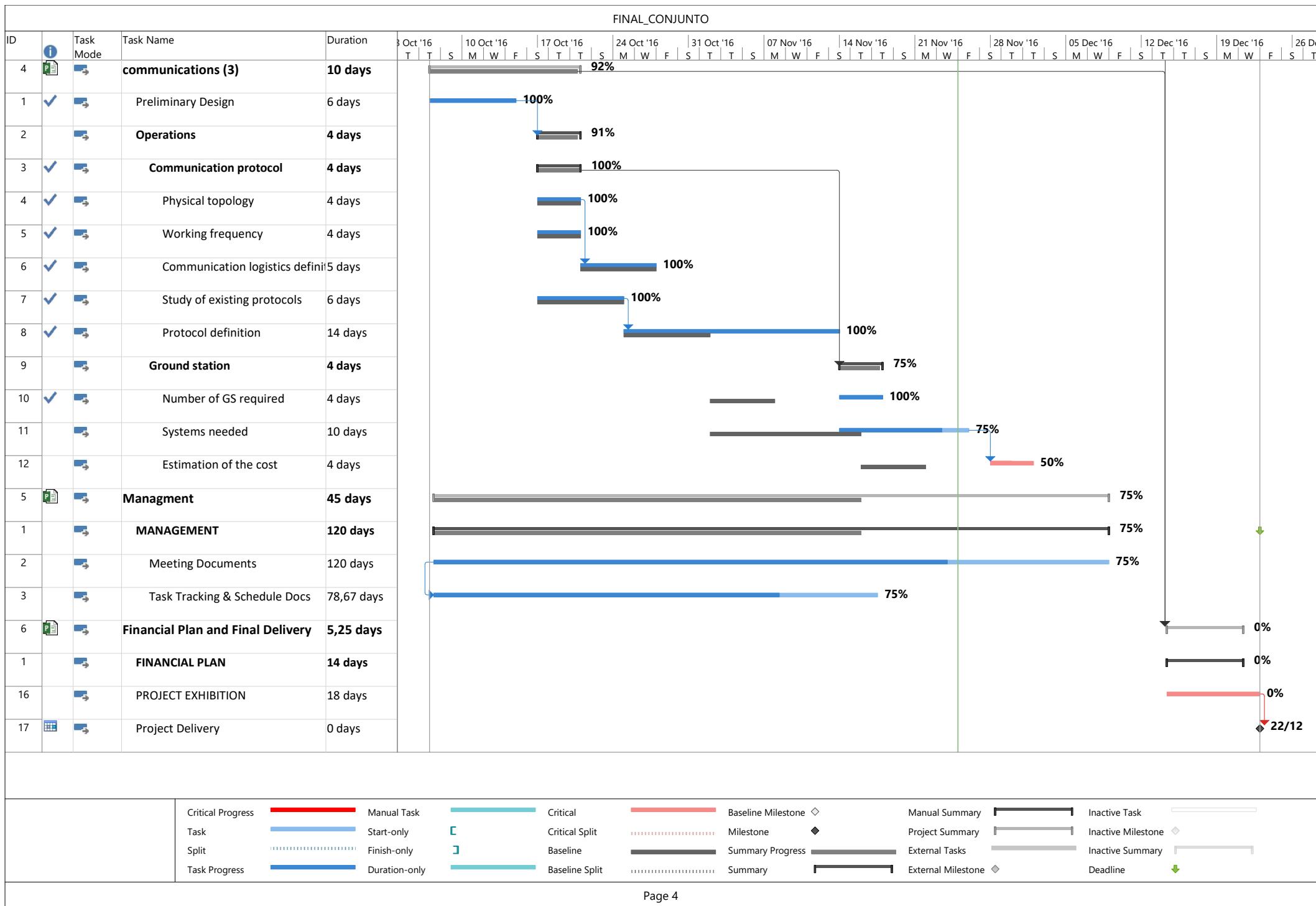


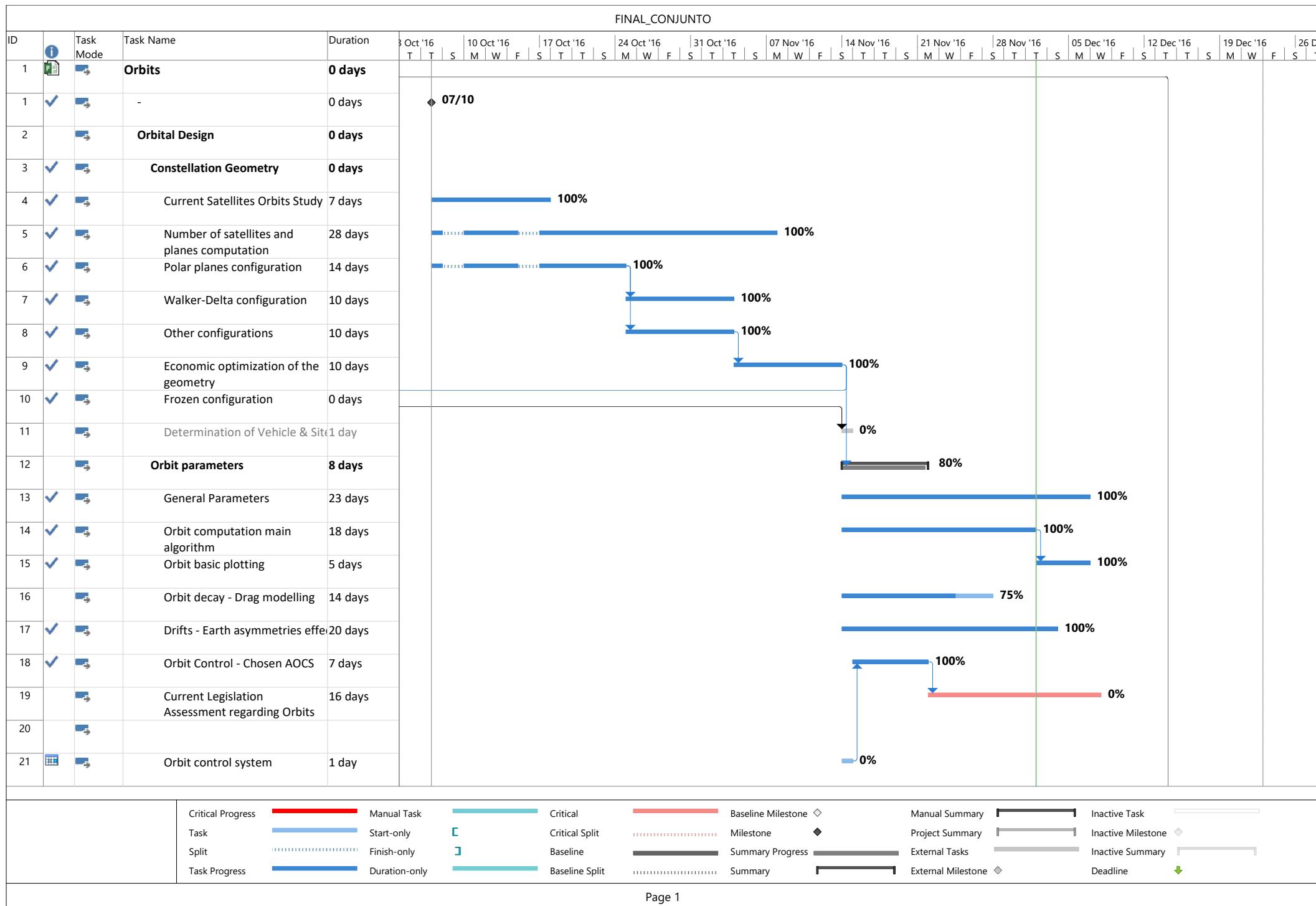


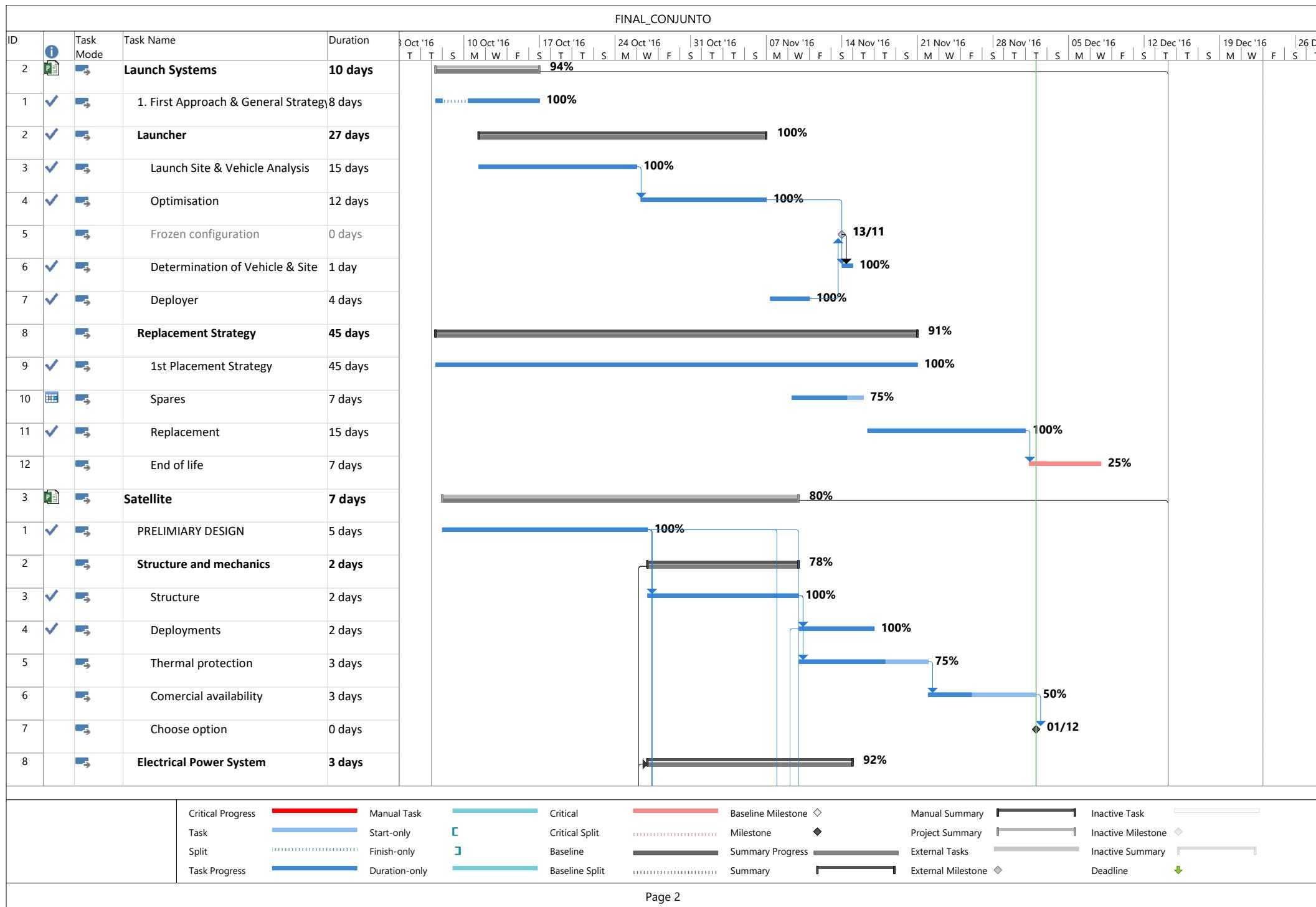


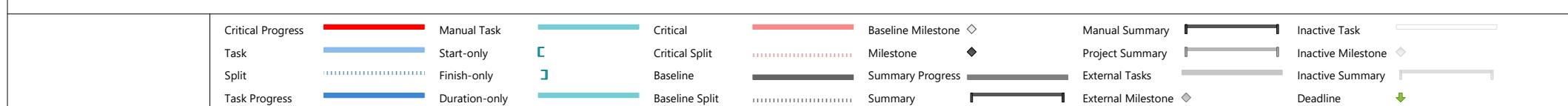
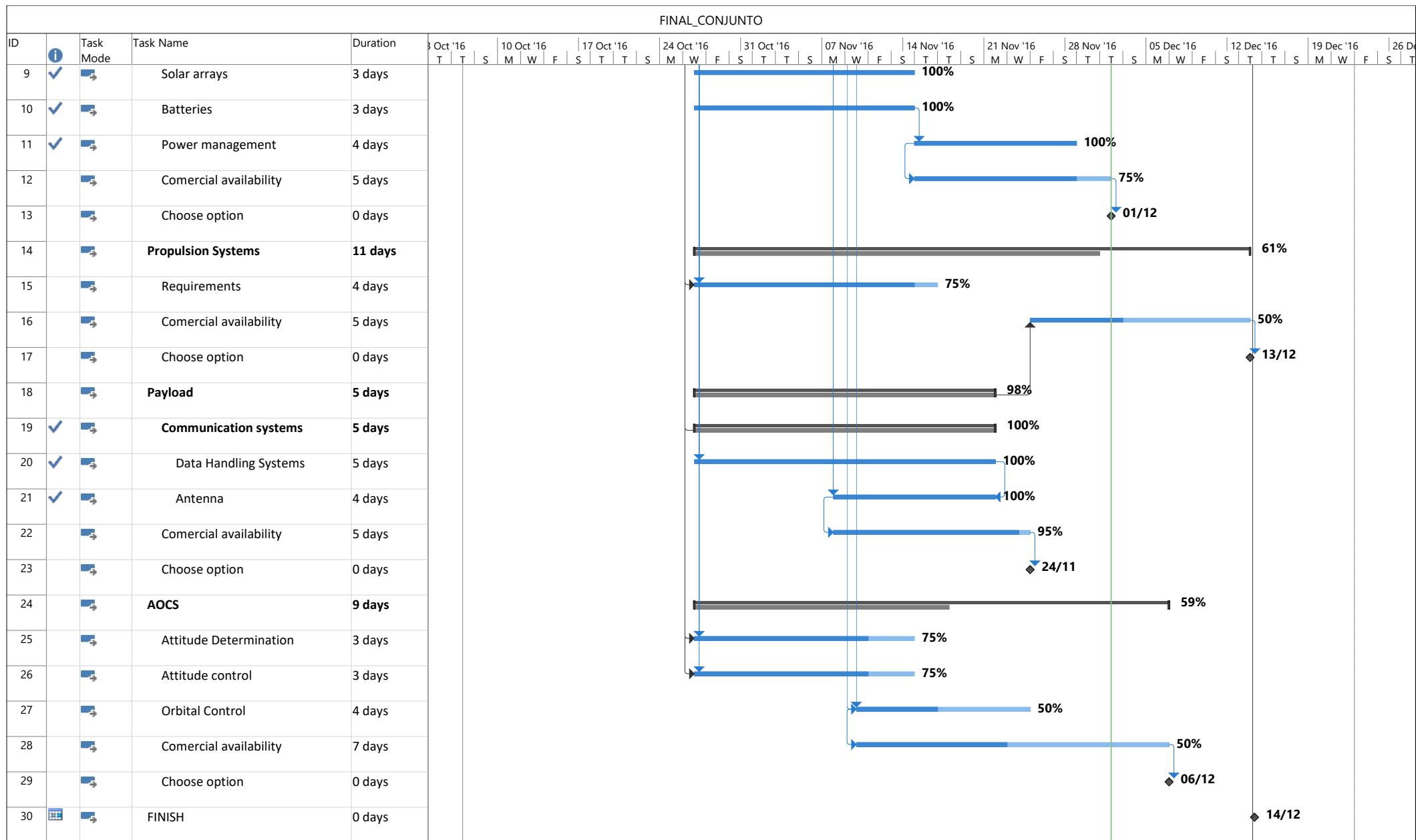


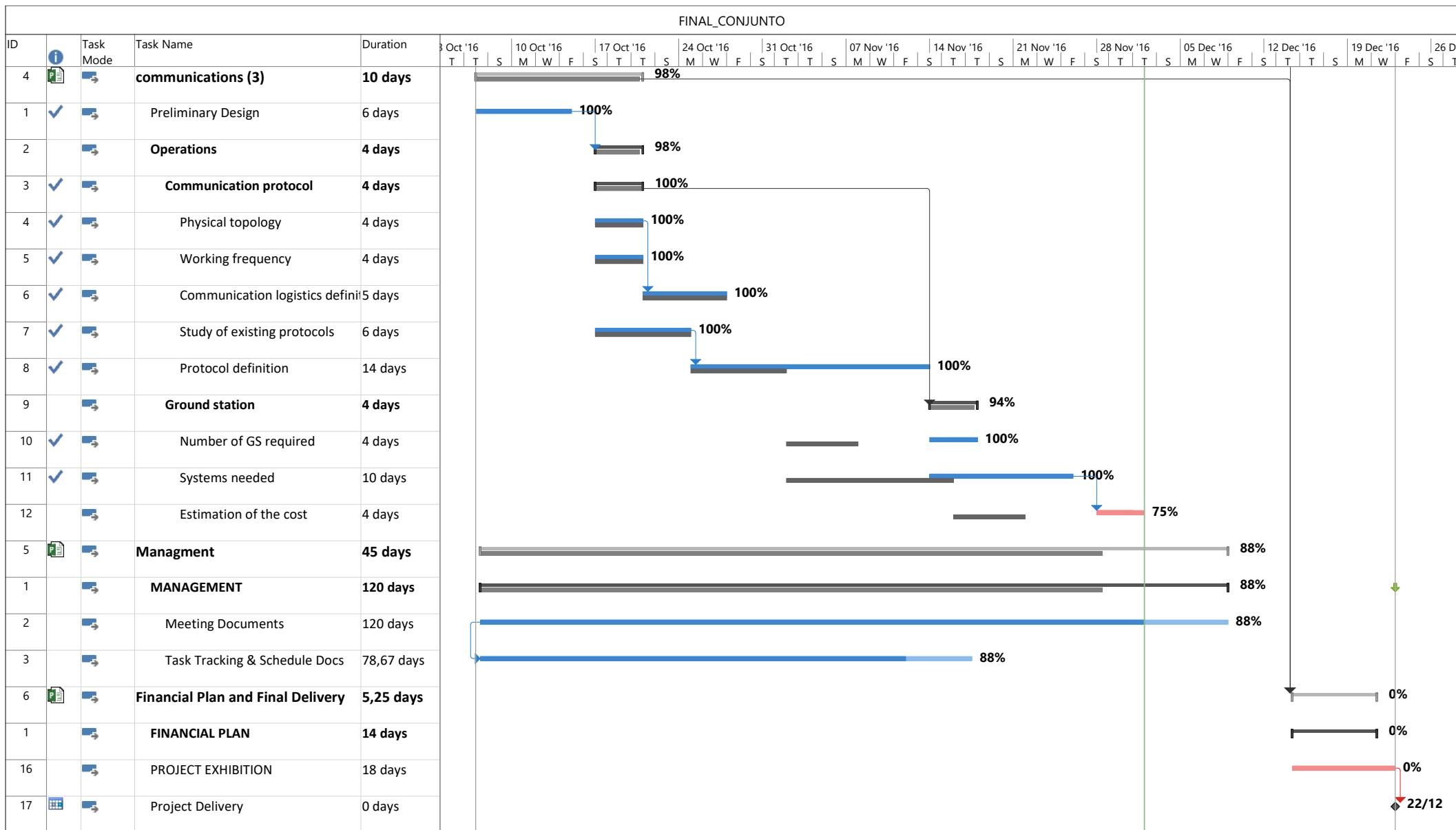


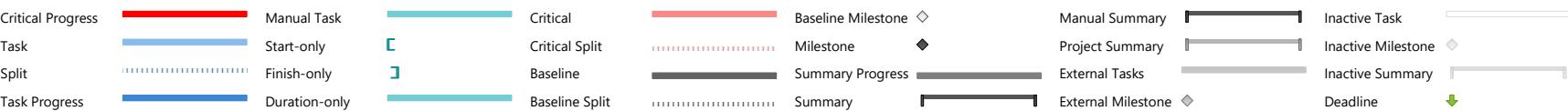
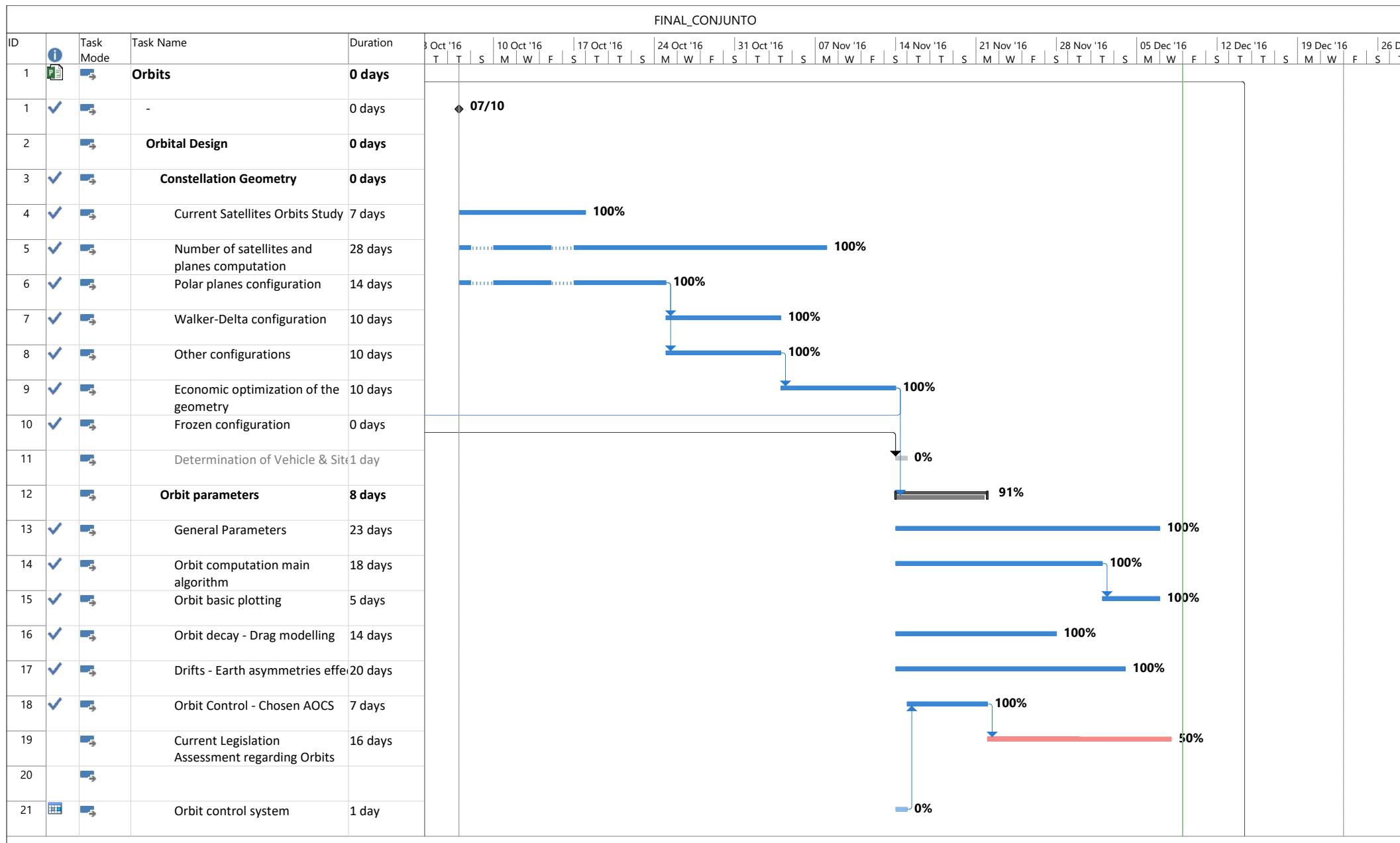


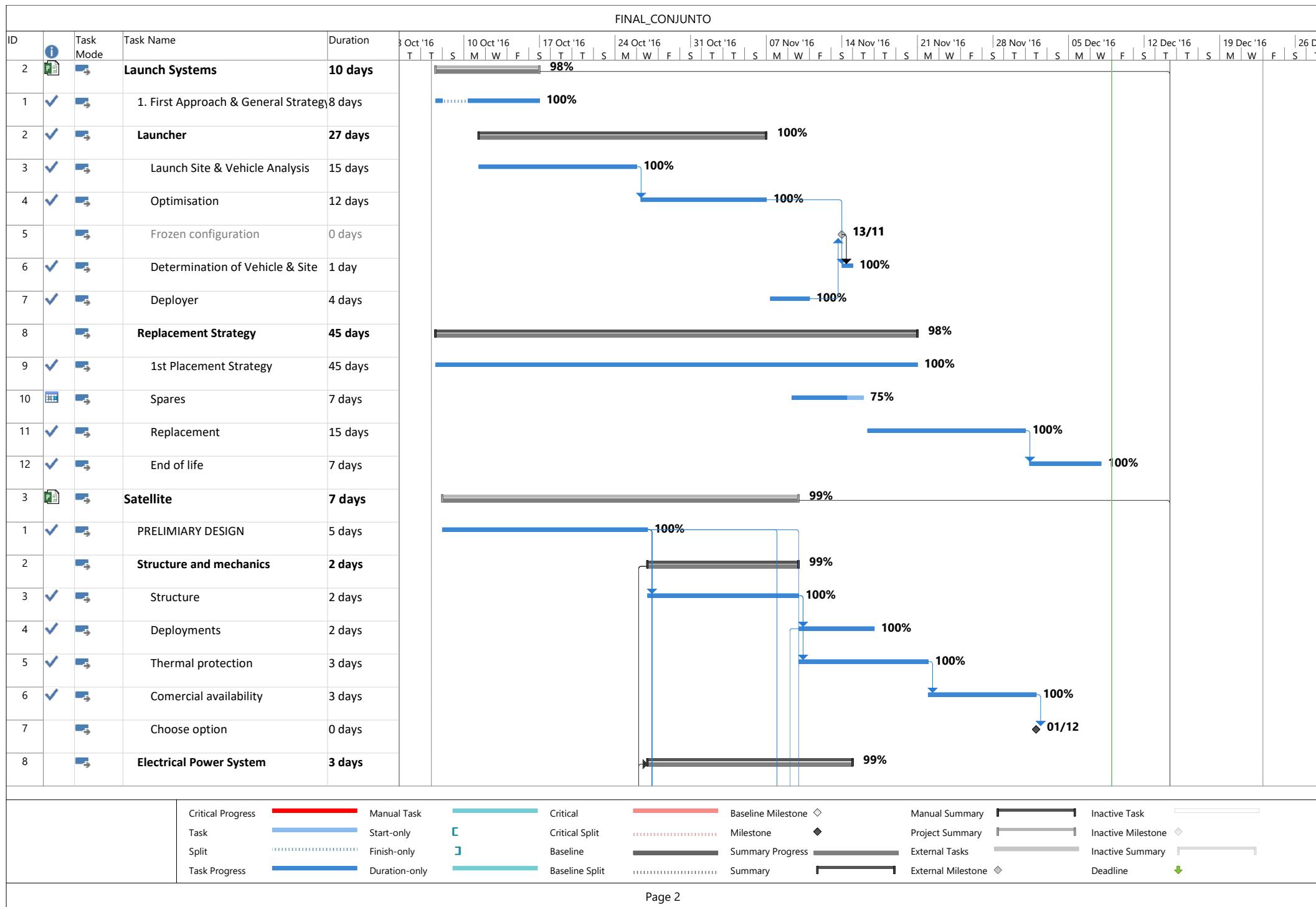


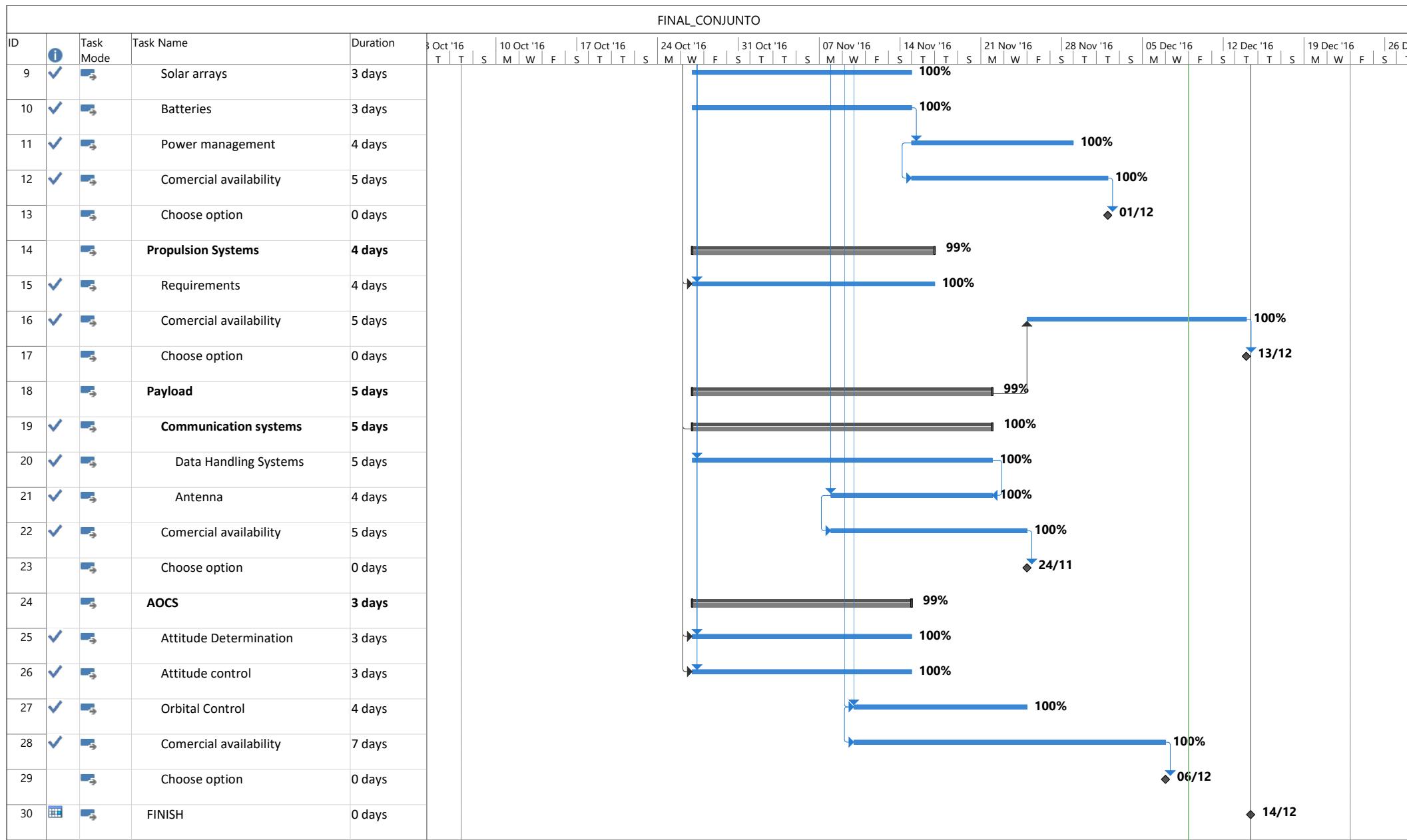


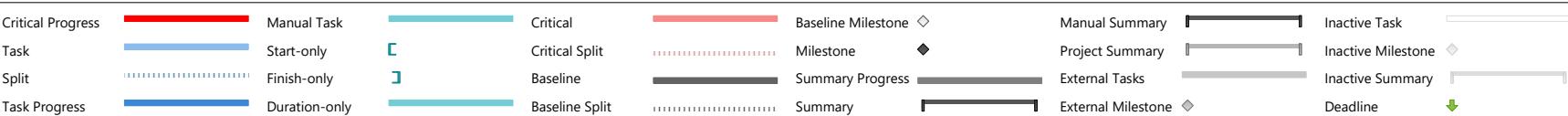
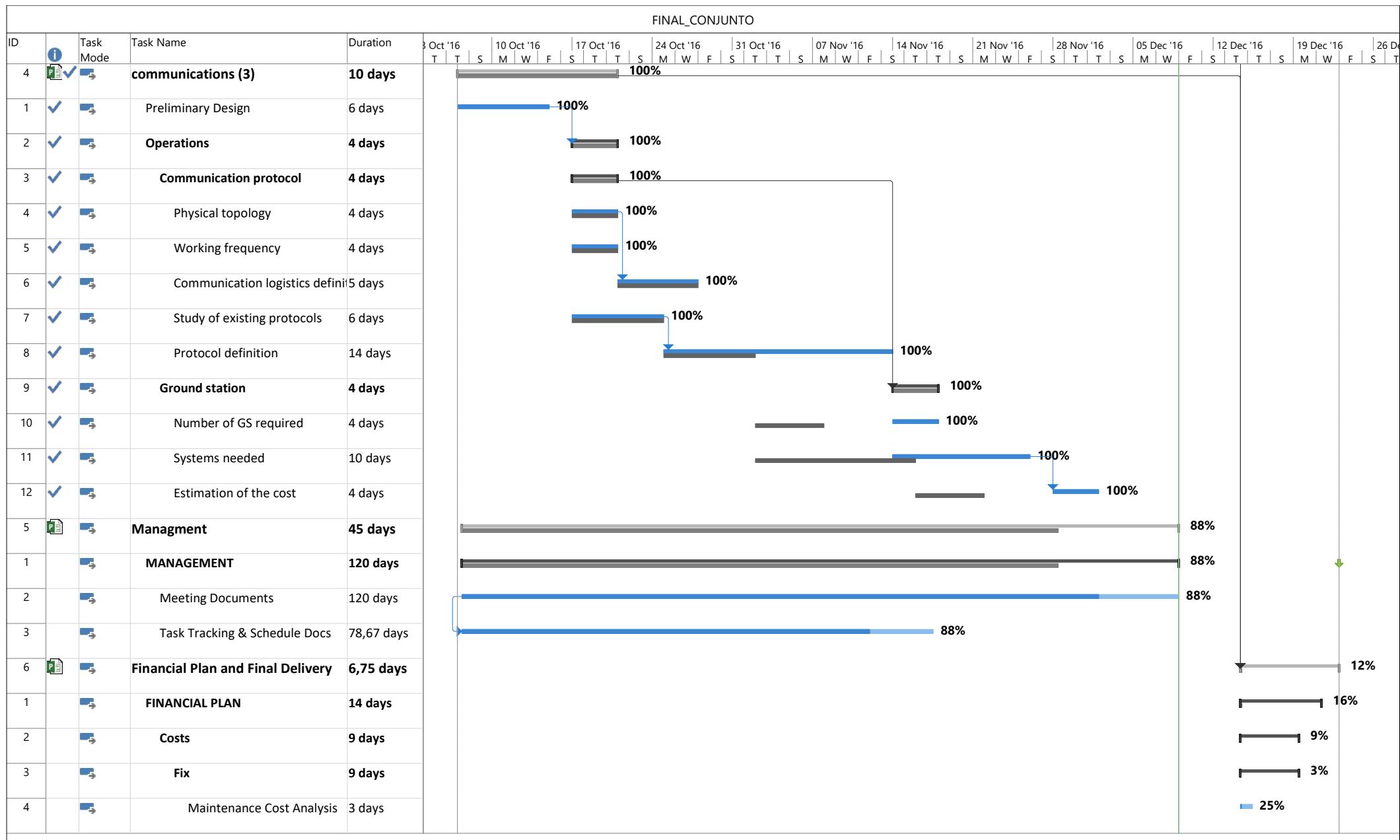




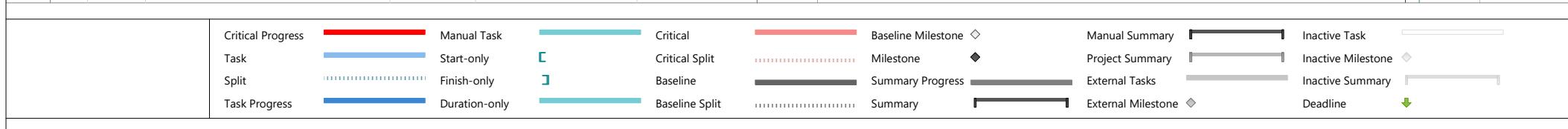






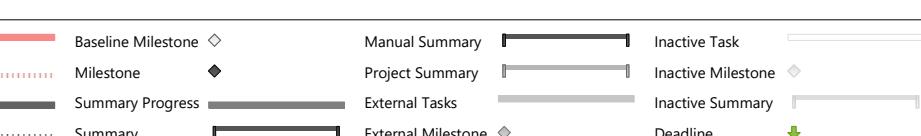


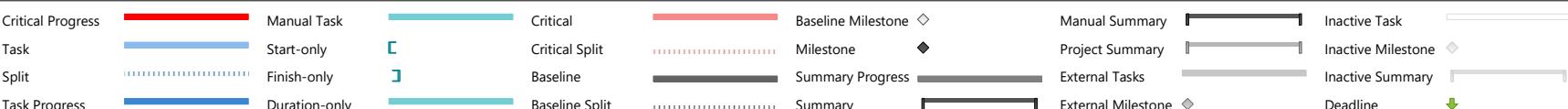
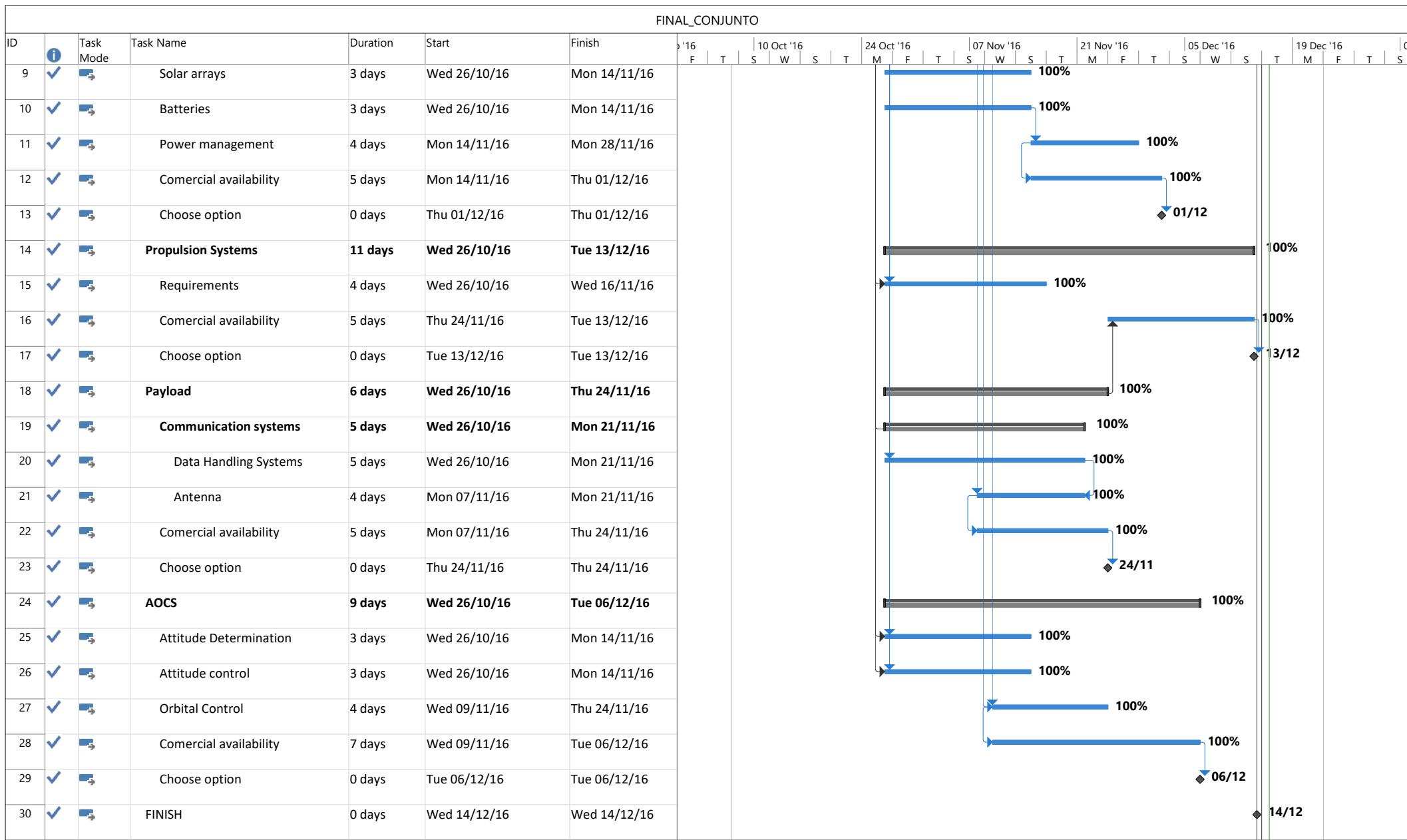




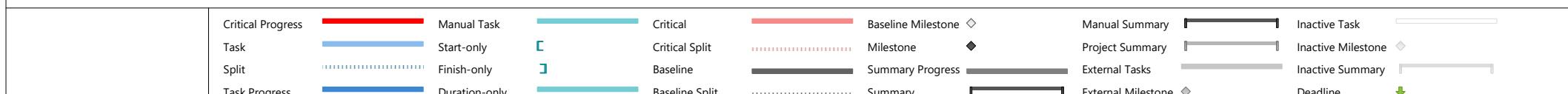
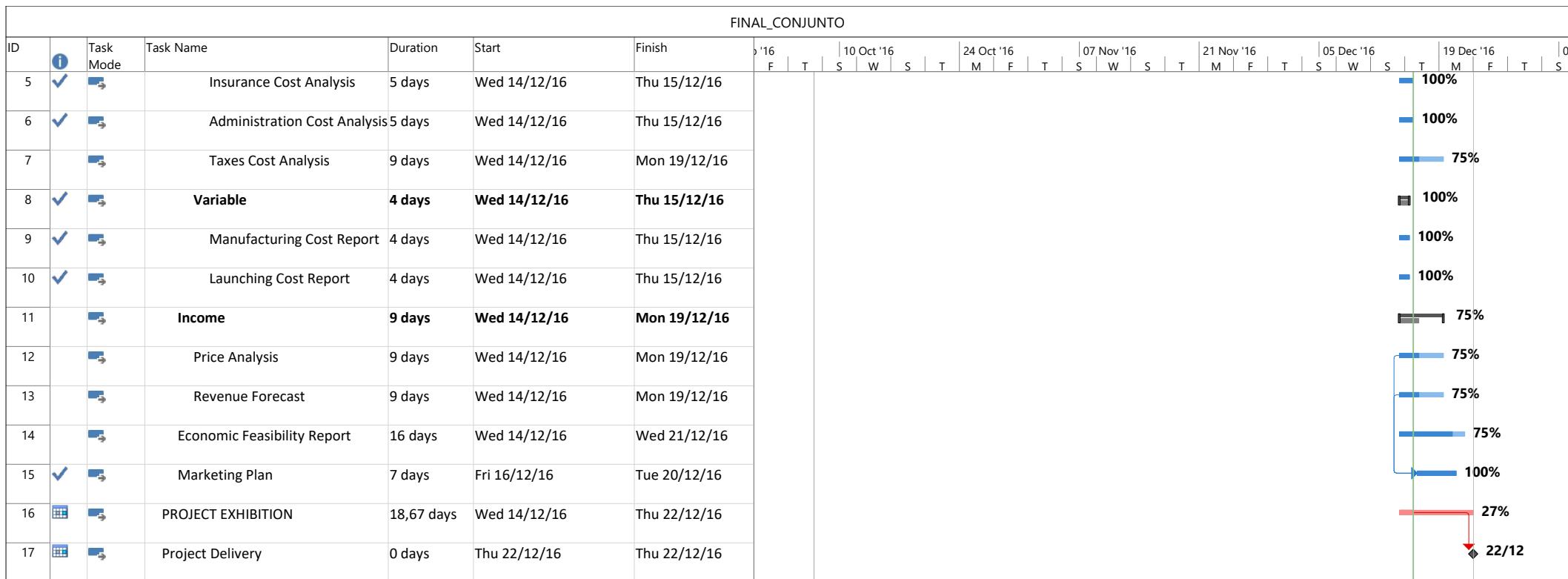
FINAL_CONJUNTO

ID	Task Mode	Task Name	Duration	Start	Finish
2		Launch Systems	62 days	Fri 07/10/16	Wed 07/12/16
1		1. First Approach & General Strategy	8 days	Fri 07/10/16	Sun 16/10/16
2		Launcher	34,75 days	Tue 11/10/16	Mon 14/11/16
3		Launch Site & Vehicle Analysis	15 days	Tue 11/10/16	Tue 25/10/16
4		Optimisation	12 days	Wed 26/10/16	Sun 06/11/16
5		Frozen configuration	0 days	Sun 13/11/16	Sun 13/11/16
6		Determination of Vehicle & Site	1 day	Sun 13/11/16	Mon 14/11/16
7		Deployer	4 days	Mon 07/11/16	Thu 10/11/16
8		Replacement Strategy	62 days	Fri 07/10/16	Wed 07/12/16
9		1st Placement Strategy	45 days	Fri 07/10/16	Sun 20/11/16
10		Spares	7 days	Wed 09/11/16	Tue 15/11/16
11		Replacement	15 days	Wed 16/11/16	Wed 30/11/16
12		End of life	7 days	Thu 01/12/16	Wed 07/12/16
3		Satellite	16,13 days	Fri 07/10/16	Wed 14/12/16
1		PRELIMINARY DESIGN	5 days	Fri 07/10/16	Wed 26/10/16
2		Structure and mechanics	8 days	Wed 26/10/16	Thu 01/12/16
3		Structure	2 days	Wed 26/10/16	Wed 09/11/16
4		Deployments	2 days	Wed 09/11/16	Wed 16/11/16
5		Thermal protection	3 days	Wed 09/11/16	Mon 21/11/16
6		Comercial availability	3 days	Mon 21/11/16	Thu 01/12/16
7		Choose option	0 days	Thu 01/12/16	Thu 01/12/16
8		Electrical Power System	8 days	Wed 26/10/16	Thu 01/12/16

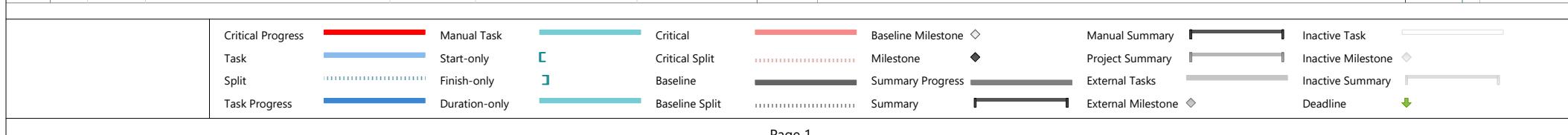








FINAL_CONJUNTO											
ID	Task Mode	Task Name	Duration	Start	Finish	Timeline					
1	✓ ✓	Orbits	62 days	Fri 07/10/16	Wed 07/12/16	01 Oct '16 F T S W S T 24 Oct '16 M F T S W S T 07 Nov '16 M F T S W S T 21 Nov '16 M F T S W S T 05 Dec '16 M F T S W S T 19 Dec '16 M F T S					
1	✓ ✓	-	0 days	Fri 07/10/16	Fri 07/10/16						
2	✓ ✓	Orbital Design	62 days	Fri 07/10/16	Wed 07/12/16						
3	✓ ✓	Constellation Geometry	38 days	Fri 07/10/16	Sun 13/11/16						
4	✓ ✓	Current Satellites Orbit Study	7 days	Fri 07/10/16	Mon 17/10/16						
5	✓ ✓	Number of satellites and planes computation	28 days	Fri 07/10/16	Mon 07/11/16						
6	✓ ✓	Polar planes configuration	14 days	Fri 07/10/16	Mon 24/10/16						
7	✓ ✓	Walker-Delta configuration	10 days	Tue 25/10/16	Thu 03/11/16						
8	✓ ✓	Other configurations	10 days	Tue 25/10/16	Thu 03/11/16						
9	✓ ✓	Economic optimization of the geometry	10 days	Fri 04/11/16	Sun 13/11/16						
10	✓ ✓	Frozen configuration	0 days	Sun 13/11/16	Sun 01/01/84						
11	✓	Determination of Vehicle & Site	1 day	Mon 14/11/16	Mon 14/11/16						
12	✓ ✓	Orbit parameters	24 days	Mon 14/11/16	Wed 07/12/16						
13	✓ ✓	General Parameters	23 days	Mon 14/11/16	Tue 06/12/16						
14	✓ ✓	Orbit computation main algorithm	18 days	Mon 14/11/16	Thu 01/12/16						
15	✓ ✓	Orbit basic plotting	5 days	Fri 02/12/16	Tue 06/12/16						
16	✓ ✓	Orbit decay - Drag modelling	14 days	Mon 14/11/16	Sun 27/11/16						
17	✓ ✓	Drifts - Earth asymmetries effect	20 days	Mon 14/11/16	Sat 03/12/16						
18	✓ ✓	Orbit Control - Chosen AOCS	7 days	Tue 15/11/16	Mon 21/11/16						
19	✓ ✓	Current Legislation Assessment regarding Orbits	16 days	Tue 22/11/16	Wed 07/12/16						
20	✓										
21	✓ ✓	Orbit control system	1 day	Mon 14/11/16	Mon 14/11/16						



FINAL_CONJUNTO

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2		Launch Systems	62 days	Fri 07/10/16	Wed 07/12/16
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8		Replacement Strategy	62 days	Fri 07/10/16	Wed 07/12/16
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1		PRELIMINARY DESIGN	5 days	Fri 07/10/16	Wed 26/10/16
2		Structure and mechanics	8 days	Wed 26/10/16	Thu 01/12/16
3		Structure	2 days	Wed 26/10/16	Wed 09/11/16
4		Deployments	2 days	Wed 09/11/16	Wed 16/11/16
5		Thermal protection	3 days	Wed 09/11/16	Mon 21/11/16
6		Comercial availability	3 days	Mon 21/11/16	Thu 01/12/16
7		Choose option	0 days	Thu 01/12/16	Thu 01/12/16
8		Electrical Power System	8 days	Wed 26/10/16	Thu 01/12/16

The Gantt chart visualizes the project timeline across three phases:

- Phase 1 (Oct 7 - Nov 14):** Launch Systems (62 days) and Replacement Strategy (62 days). The Replacement Strategy task starts on Oct 7 and ends on Nov 14.
- Phase 2 (Nov 14 - Dec 5):** Satellite (16,13 days) and Electrical Power System (8 days). The Satellite task starts on Nov 14 and ends on Dec 5.
- Phase 3 (Dec 5 - Dec 5):** End of life (0 days), which concludes the project on Dec 5.

Key milestones marked on the timeline include 13/11 and 01/12.

