Australian Government
Defence

SEA5000-1 Integrated Master Schedule Case Study

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TBH

Outline

- SEA5000-1 HCFP brief
- Where we were
- Why an integration process was required
- Where we are now
- Limitations and considerations
- Enhancements and positives

SEA5000-1 Hunter Class Frigate Program

- Largest shipbuilding program in Australia
- Nine Hunter Class Frigates
- BAE Systems Maritime Australia (BAESMA) as Prime Contractor
- Sovereign engineering design capability
- Continuous Naval Shipbuilding and Australian Industry Capability

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The Situation

- Hunter Class Frigate (HCF) Program Integrated Master Schedule (IMS) contains BAESMA's Contract Master Schedule (CMS) and the Commonwealth of Australia's (CoA) schedules
- BAESMA's CMS is in P6 and CoA's schedules are in OPP
- Schedule data integration issues

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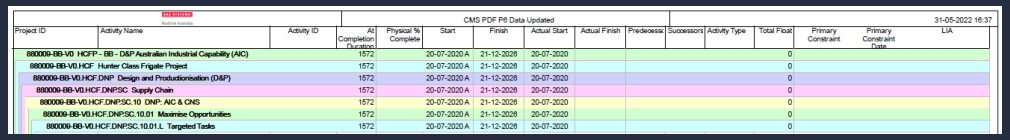
Where We Were

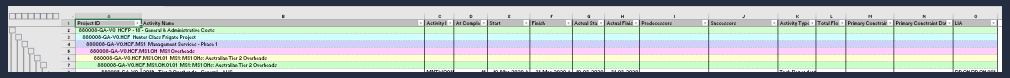
- Month-end schedule data contained 2 files
- PDF file



CMS PDF P6 Data Updated — 31-05-2022 16:37

Project ID	Activity Name	Activity ID	At Completion Duration	Physical % Complete	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Activity Type	Total Float	Primary Constraint	Primary Constraint Date	LIA
880009-BB-V0	HCFP - BB - D&P Australian Industrial Capability (AIC)		1572		20-07-2020 A	21-12-2026	20-07-2020					0			
880009-BB-V0.HCF	Hunter Class Frigate Project		1572		20-07-2020 A	21-12-2026	20-07-2020					0			
880009-BB-V0.HCF.DNP	Design and Productionisation (D&P)		1572		20-07-2020 A	21-12-2026	20-07-2020					0			
880009-BB-V0.HCF.DNP.SC	Supply Chain		1572		20-07-2020 A	21-12-2026	20-07-2020					0			
880009-BB-V0.HCF.DNP.SC.10	DNP: AIC & CNS		1572		20-07-2020 A	21-12-2026	20-07-2020					0			
880009-BB-V0.HCF.DNP.SC.10.01	Maximise Opportunities		1572		20-07-2020 A	21-12-2026	20-07-2020					0			
880009-BB-V0.HCF.DNP.SC.10.01.L	Targeted Tasks		1572		20-07-2020 A	21-12-2026	20-07-2020					0			

- CSV used to create ‘CMS Tool’



- Some ‘CMS Tool’ limitations

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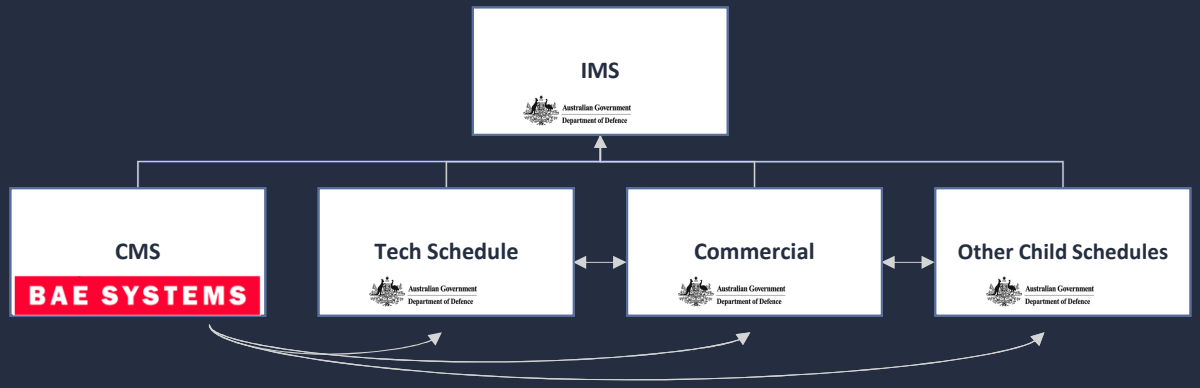
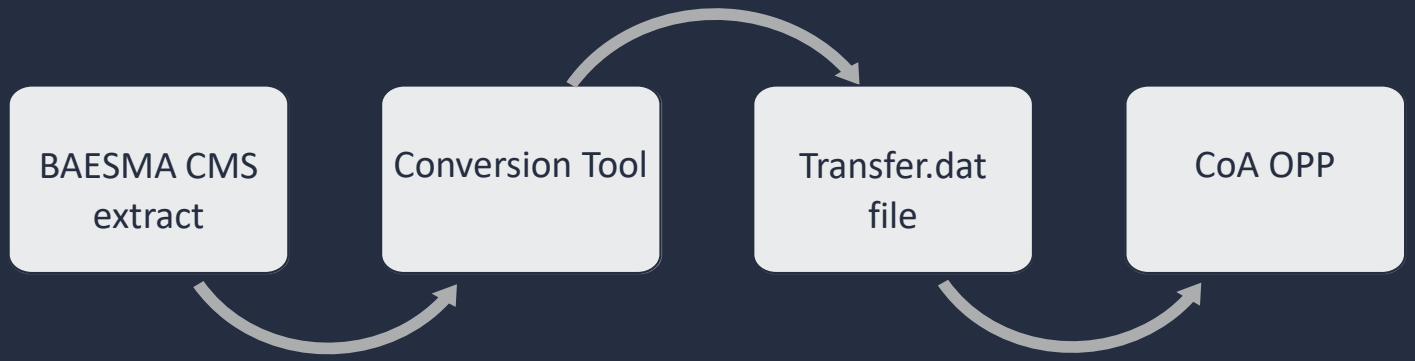
The IMS Structure

- IMS contains over 20 BAESMA schedules and 8 CoA schedules
- Uni-directional links from CMS to other IMS child schedules



The Integration Process

- High-level view of Integration Process



- Initial setup: Calendar File
- Code: WBS Code 01

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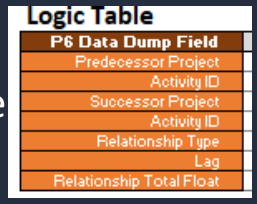
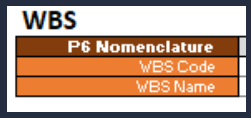
The Integration Process

- Files received monthly from BAESMA
- Activity Data Export
  - 37 Attributes with Validated Calendar, C1 WBS ID and spare UIDs
- Logic Data Export
  - P6 Project and Activity IDs for Predecessors and Successors, Logic Type, Lag Value
- WBS Code Export
  - Code ID, Code Description and a check code line for WBS parents





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The Integration Process

- The Conversion Tool - Tabs

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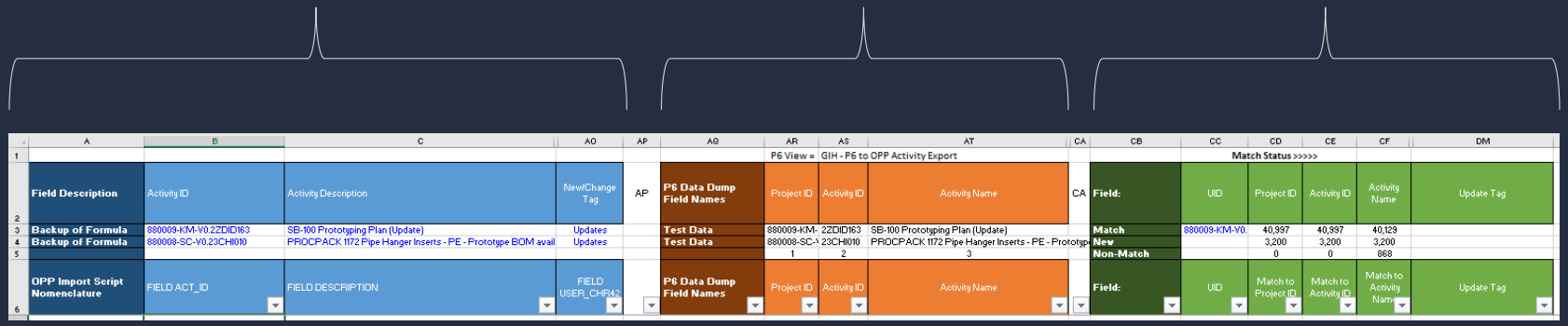
The Integration Process

- The Conversion Tool – 3 coloured sections

Contains formulas which convert the data to imported into OPP

Contains raw data copied from P6 export

Contain formulas which compute checks on the raw data



	A	B	C	AO	AP	AQ	AR	AS	AT	CA	CB	CC	CD	CE	CF	DM
1						P6 View =	GIH - P6 to OPP Activity Export				Match Status >>>>>					
2	Field Description	Activity ID	Activity Description	New/Change Tag	AP	P6 Data Dump Field Names	Project ID	Activity ID	Activity Name	CA	Field:	UID	Project ID	Activity ID	Activity Name	Update Tag
3	Backup of Formula	880009-KM-V0.2ZDID163	SB-100 Prototyping Plan (Update)	Updates		Test Data	880009-KM-	2ZDID163	SB-100 Prototyping Plan (Update)		Match	880009-KM-V0.	40,997	40,997	40,129	
4	Backup of Formula	880008-SC-V0.23CHI010	PROCPACK 1172 Pipe Hanger Inserts - PE - Prototype BOM avail	Updates		Test Data	880008-SC-\	23CHI010	PROCPACK 1172 Pipe Hanger Inserts - PE - Prototyp		New		3,200	3,200	3,200	
5							1	2	3		Non-Match		0	0	868	
6	OPP Import Script Nomenclature	FIELD ACT_ID	FIELD DESCRIPTION	FIELD USER_CHR42		P6 Data Dump Field Names	Project ID	Activity ID	Activity Name		Field:	UID	Match to Project ID	Match to Activity ID	Match to Activity Name	Update Tag

BAESMA CMS extract → Conversion Tool → Transfer.dat file → CoA OPP

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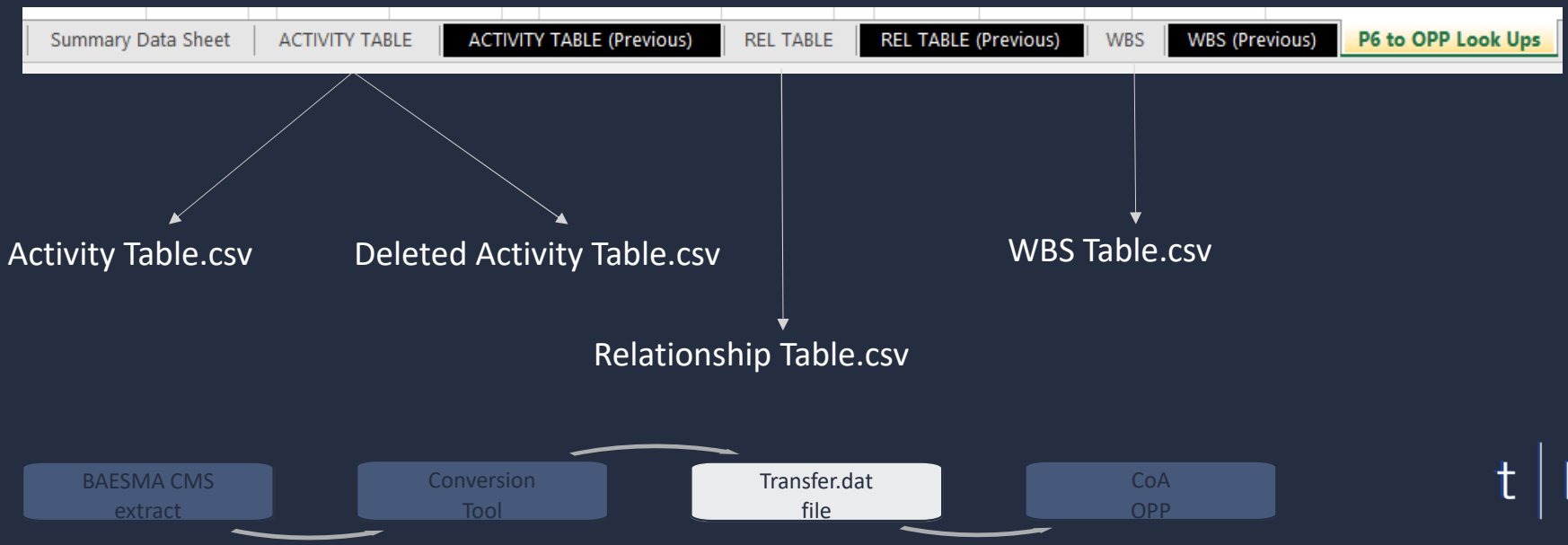
The Integration Process

- Create the CSV files:



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The Integration Process

- Import the CSV files in this order:
  - Deleted Activities Table
  - WBS Table
  - Activity Table
  - Relationship Table

Limitations of Integration Process

- No multi-directional links between CoA schedules and BAESMA's CMS within the IMS
- Resource information and Baselines excluded from integration process
- P6 Suspend and Resume feature
- Capability issues:
  - Impacts of Out of Sequence logic
  - As Late As Possible (ALAP) vs As Soon As Possible (ASAP) Activity Types
  - Constraints

Further Improvements

- Exploration of OPP's Import Wizard capability now that CoA have rolled out v8.4
- Resource loading of the Commonwealth's IMS

Enhanced Schedule Capability

- Integration process ensures CoA can view schedule in CASG sanctioned schedule software
- Dependency management
- Open dialog within BAESMA's internal leadership, and between BAESMA and CoA
- Improved working relationship between BAESMA PMO and CoA Schedule Team
- CoA can fulfil assurance role

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Conclusion

- SEA5000-1 HCFP brief
- Where We Were
- Why an Integration Process was required
- Where We Are Now
- Limitations and considerations
- Enhancements and Positives

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Acknowledgements

- Nishani Fischer – TBH Consultant (previously)
- Garth Hayter – BEASMA PMO Planning Manager

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Thank you