PROGRAMME LIFECYCLE							
STRATEGIC PHASE				DELIVERY PHASE			
INITIATION STAGE	DEFINITION STAGE	ESTABLISHMENT STAGE	MANAGEMENT STAGE	DELIVERY STAGE			CLOSE
PROGRAMME OBJECTIVES	PROGRAMME SCOPING	PROGRAMME PRIORITISATION	PROGRAMME OPTIMISATION	FEASIBILITY	DESIGN	IMPLEMENTATION	CLOSEOUT STAGE
				IM			

Programme Delivery

An Integrated Programme Schedule

Helping Asset Owners effectively manage the interrelationships in Programmes

By the Introduction of Project Interfaces Management (IM)

Why Do We Need an Integrated Programme Schedule?

If a programme has 100 projects and each project has 5 interdependences that means there are 500 interfaces that are not being managed by the individual Project Managers and have to be controlled centrally by the PMO.

At a project level dependencies and interdependencies are usually stored in a RAID Log but from a programme perspective this is unsuitable as it does not provide an enterprise view. These interfaces are probably the biggest risk to the overall programme achieving success which forces a different approach.

Therefore when developing a large scale capital programme, it is important for the PMO to understand the project interfaces contributing to its delivery.

One way key factor in enabling this is to integrate the Project schedules within the Programme.

This will allow the PMO to provide a more effective service due the fact it:

- Includes all interfaces and dependencies
- Delivers the critical path for the overall programme as well as the projects within it
- Supports the full budget profile to the end of the programme as well as the project
- Provides representation of the defined Programme scope
- Allows the PMO to develop an accurate representation of the overall programmes resource demand
- Allows easier identification of programme risk as well as individual project risks
- Allows for "What If scenario planning" when interfaces impact recipient projects
- Becomes the main approach used for reporting schedule variance at a programme level

Effective Interface Benefits

Delivery	The management of interfaces ensures that the programme and programme tranche is delivered effectively and efficiently and ensures that the interests of the programme are taken into account and not just specific projects within it.
Benefits Management	Individual projects on the whole deliver outputs but benefits and outcomes are delivered at Programme level. Therefore the effective management of the programme and how interactions occur is critical to the overall success.
Programme Performance:	Managing the interfaces gives the Programme Manager the ability to protect the balance of the programme when some interfaces become at risk, by allowing development of workarounds and carrying out what if scenarios.

Programme Dependency Types

As well as the usual internal project dependencies, there are three types of interdependencies that occur within Capital Programmes:

1) External Dependencies that are "external to a project" and external to the Asset Owner

A. Regulatory approvals

B. New legislation.

2) Inter Dependencies between projects within a programme

A. Transfer of labour resources

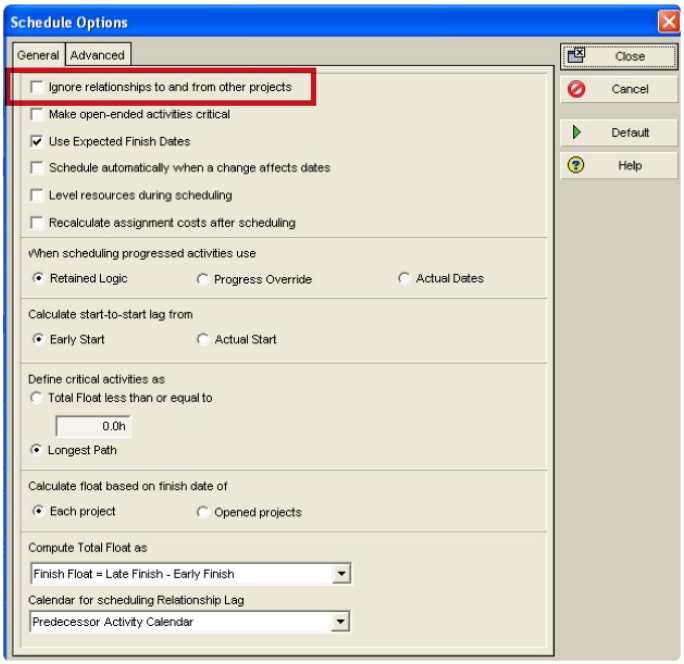
B. Transfer of equipment between projects

C. Interconnected tasks between projects

3) Enterprise-wide project dependencies.

A. Programme level Kit framework suppliers

B. Utility diversions



Programme Schedule?

An integrated programme schedule is used where there are many projects of work being undertaken within an Asset Owner's organisation.

The use of an integrated programme schedule produces a Milestone Interface register which identifies project clashes in the planning of activities. When large programmes are integrated consideration should be given to implementing an approach which can interrogate all the programmes within the Asset Owner organisation to produce consistent outputs to the PMO.

We are assuming that the schedules for the projects within the programme are being built as an enterprise. This approach is supported by leading toolsets such as Oracle Primavera P6, Microsoft Enterprise Project Management, and Asta Powerproject Enterprise.

Also whilst interfaces can be placed between projects it is business critical that these links **DO NOT DRIVE** the projects after the baseline is taken. This is normally controlled by settings in the administration rights

Where Does an Integrated Programme Schedule fit into the Overall Programme Cycle?

The project interface tracking process commences in the Management stage within the Strategic phase of a capital programme when the capital programme tranches are being finalised. Once the overall programme scope has been rationalised and the individual requirements formulated into tranches of projects the tracking capability has to be established.

How does an Integrated Programme schedule work?

Understanding which projects have an interface or dependencies enables ownership of the integrated schedule by the Programme Manager. In the Strategic Stage an integrated programme schedule of all the project schedules within the tranche is developed and goes through a six stage process:

Collaborative Planning is essential to understand and identify interfaces.

Step 1: All the defined projects within the programme tranche have schedules developed

Step 2: The interfaces between the schedules are identified, dependency milestones added and links applied between the schedules (note driving logic for interlinked schedules should be disabled)

Step 3: There should be a full review of each schedule and the impact of each of the interfaces

Step 4: A programme baseline of the specific tranche is taken

Step 5: The integrated baseline programme should be interviewed

Step 6: Delivery Update cycle commences the regular update cycle produces outputs such as the Milestone Interface register, which identifies potential slippages and clashes of unrelated projects, by comparing the new "Benefactor" and "Beneficiary" dates.

The interfaces should be reviewed after each update cycle to ensure the continuous clarity of both project and programme end states. This enables timely interventions and re-direction of projects when required.

Underpinning for an Interface Management approach

If the realisation of benefits can be defined in a time aspect of the overall capital programme, this will help the Asset Owner's management, in the business challenges that will occur on how the programme is performing towards its goals and intent.

Once the baseline is established this is illustrated below where there is a slippage in the Baseline "Benefactor" date As these are independent programmes using only none driving links allows revised or alternatives to be identified before the impact the "beneficiary" date is allowed

Project ID	Project Title	Activity	Milestone	Dependency Type	Baseline Date	Current Date	Variance
MWH001	Security Fencing at all sites Area 1	001 Site1 Commissioned	Interface = Benefactor	2C	01/08/16	26/08/16	-26
MWH002	Security Alarms at all sites Area 1	002 Site1 commence Installation	Interface = Beneficiary	2C	01/08/16	26/08/16	-26

Example of update where receiving schedule Update accommodates the Interface slippage but only after controls are applied

If no alternative can be developed, the necessary audit trail is established and the receiving project dates are slipped
NOTE: Only the EAC is changed and not the baseline

MILESTONE INTERFACE REGISTER								
Benefactor Milestone (Donor Project)				Beneficiary Milestone (Receiving Project)				Variance (Days)
Project Code	Description	Benefactor Activity	Benefactor Date	Project Code	Description	Beneficiary Activity	Beneficiary Date	
MWH001	Fencing	0001 Erect	26/8/2016	MWH002.	Alarms	0001Install	1/8/2016	-26
MWH003	Fencing	0001 Erect	05/7/2016	MWH004.	Alarms	0001Install	1/8/2016	+26

Example of Milestone Interface Register

To create an Integrated Baseline Programme Schedule – Within each project an interface milestone is created to provide the deliverable, tagging this milestone as a "Benefactor" and the project receiving the deliverable tagging the milestone as a "Beneficiary"

Project ID	Project Title	Activity	Milestone	Dependency Type	Baseline Date	Current Date	Variance
MWH001	Security Fencing at all sites Area 1	001 Site1 Commissioned	Interface = Benefactor	2C	01/08/16	01/08/16	0
MWH002	Security Alarms at all sites Area 1	002 Site1 commence Installation	Interface = Beneficiary	2C	01/08/16	01/08/16	0

Example Of Schedule Baseline

The way this function is carried out each project has to identify the beneficiary dependency it needs, the beneficiary project then asks the donor (benefactor project for the related activity information and a **NON DRIVING** link is established.

Project ID	Project Title	Activity	Milestone	Dependency Type	Baseline Date	Current Date	Variance
MWH001	Security Fencing at all sites Area 1	001 Site1 Commissioned	Interface = Benefactor	2C	01/08/16	26/08/16	-26
MWH002	Security Alarms at all sites Area 1	002 Site1 commence Installation	Interface = Beneficiary	2C	01/08/16	01/08/16	0

Example of Schedule Update where the impact of the interface slippage has not been accepted until evaluation has occurred

When developing a large scale capital programme, it is important for the PMO to understand the project interfaces contributing to its delivery.

One way key factor in enabling this is to integrate the Project schedules within the Programme.

Visualisation

Sludge Programme

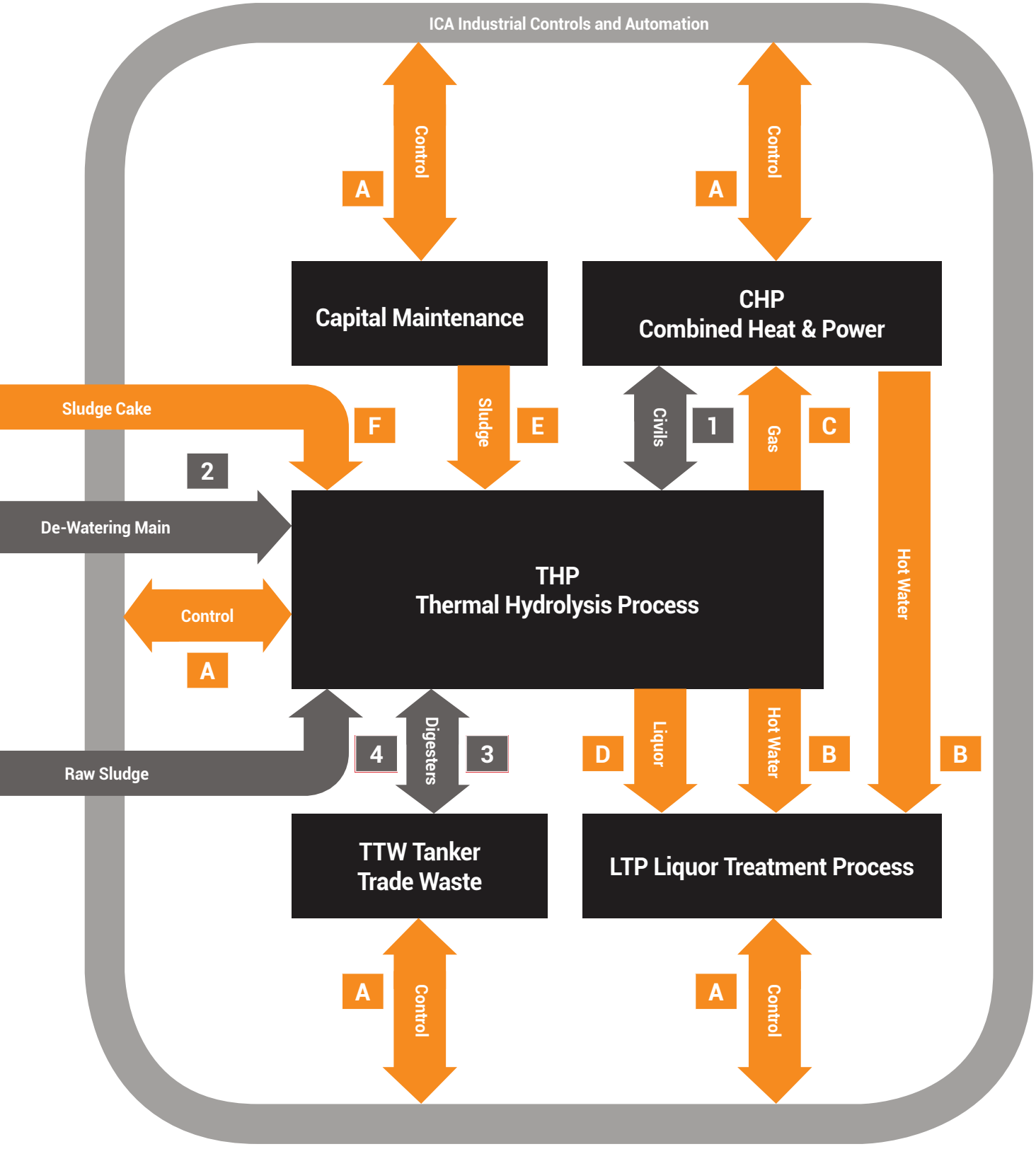
Interface Storyboard

	Process/Operational interfaces
A	ICA & SCADA upgrade to support operational control of the new plant and equipment
B	Hot water to be provided from THP & CHP in order to commission LTP
C	New CHP required in order to shut down existing to enable exhaust gas connection to be made
D	LTP needs to be complete prior to commencement of THP centrifuge commissioning
E	Primary Tank modification in order to extract sludge for THP
F	Complete dewatering facility for provision of sludge cake

Site 2
De-watering

	Construction Logistics `interfaces
1	Co-ordination of civil works in proximity of the boiler house inc. spoil removal
2	Co-ordination of dewatering main shut down and diversion with site 2 operations
3	Existing digesters to be decommissioned for conversion to TTW
4	Provide raw sludge capacity to enable decommissioning of site 3 digestors

Site 3
Tanker
Export


ICA Industrial Controls and Automation
Control
A
Control
A
Capital Maintenance
CHP
Combined Heat & Power
Sludge Cake
F
Sludge
E
Civils
1
Gas
C
2
De-Watering Main
THP
Thermal Hydrolysis Process
Hot Water
Control
A
Raw Sludge
4
Digesters
3
D
Liquor
Hot Water
B
B
TTW Tanker
Trade Waste
LTP Liquor Treatment Process
A
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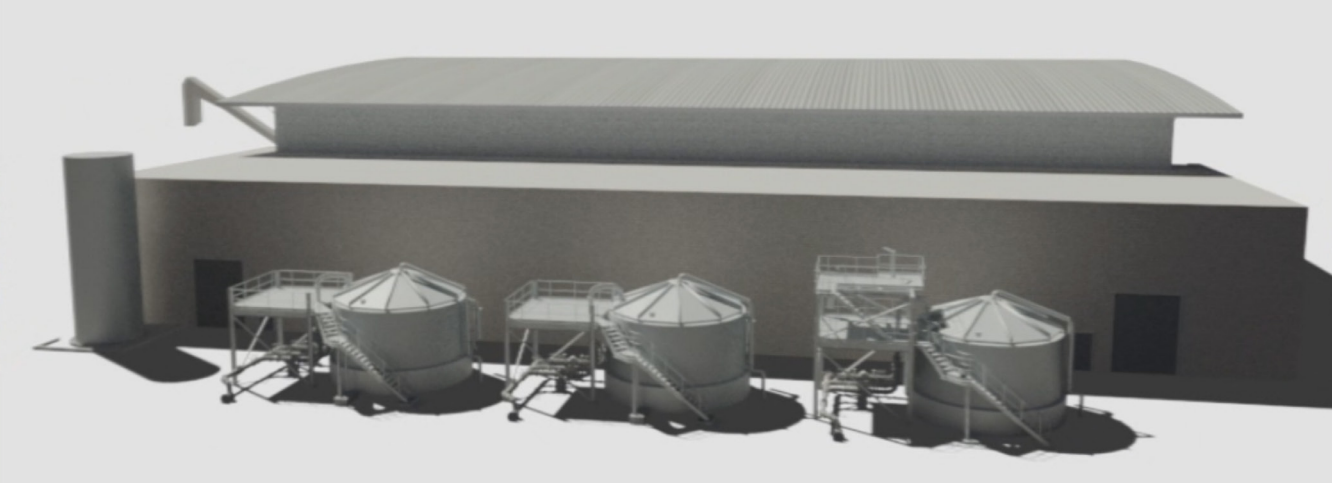
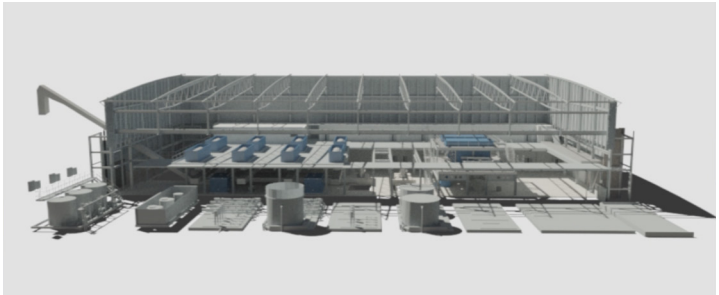
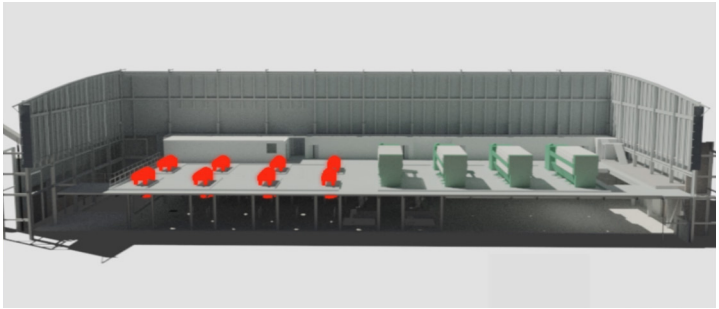


There are many ways to represent the programme interfaces such as:

- Extracted to excel to build tabular report
- TILOS Software using extract from enterprise scheduling too to form Network diagram, but the table is still needed for analysis.
- If the milestones can be related back to a geographic position on a building site the information can be
- Synchro schedule visualisation tool.
- Oracle Primavera Visualizer Software to form network diagram, but the table is still needed for analysis
- Displayed in a GIS tool or 3d Modelling tool.





Understanding the multi schedule interfaces allows design to be developed into a model timeline allowing the sequencing to be scrutinised.

Key Benefits

- Constant Approach to all Programmes
- Integrated Programme Resource and cost loaded schedule
- Highlights all interfaces and dependencies
- Produces Milestone interface register

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