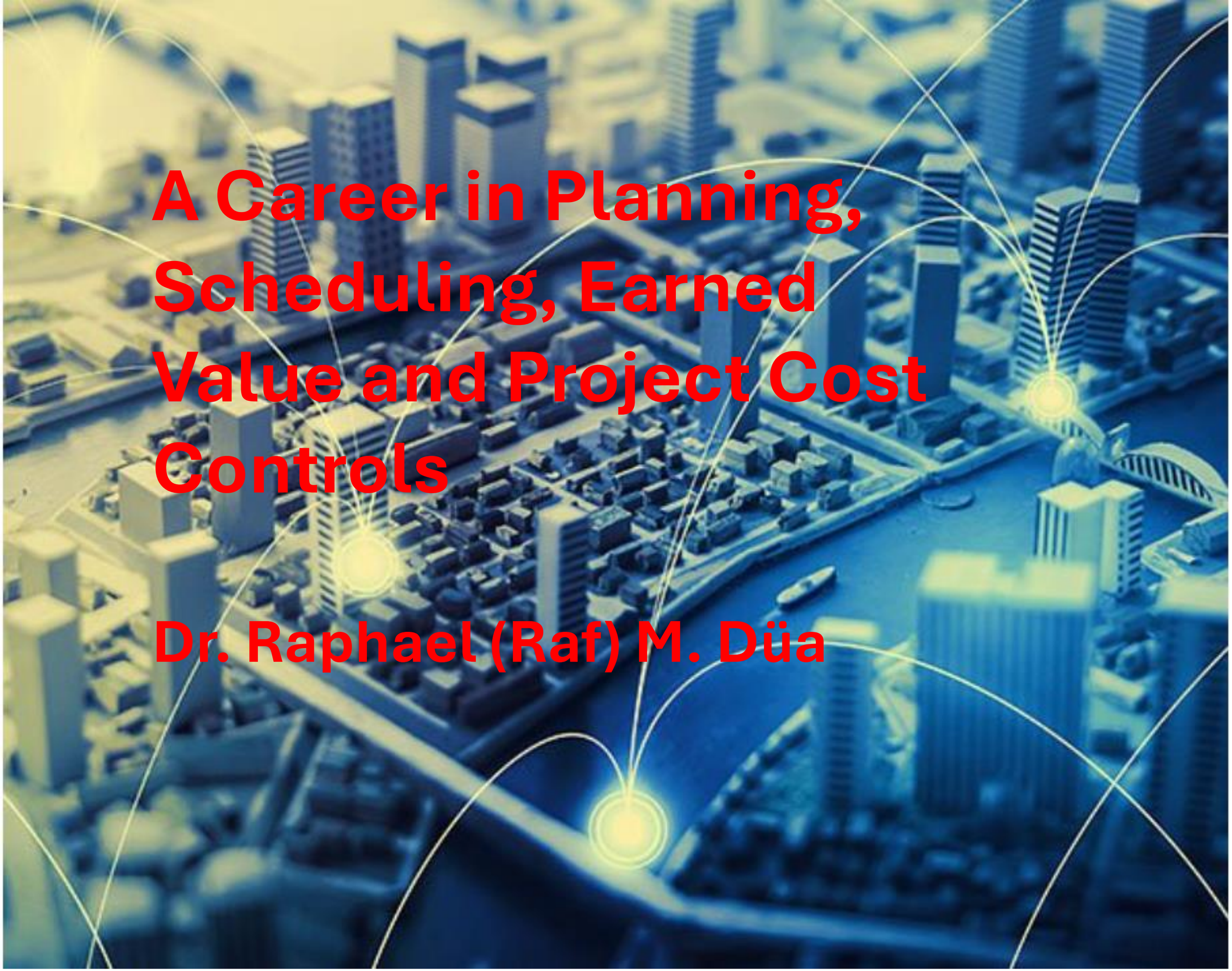

A Career in Planning, Scheduling, Earned Value and Project Cost Controls
Dr. Raphael (Raf) M. Düa

Raf Düa

Lead Planner / Scheduler for the first 2 Collins Class submarines, at ASC in Adelaide. These were both launched on time and on budget.

- HMAS Collins on 28-08-93
- HMAS Farncombe on 15-12-95
- Value $AUD 1.9 billion (for the two boats)
- Total Project Value $AUD 5.4 billion

Lead Planner / Master Scheduler for the NDRRA project in Rockhampton,

- Delivered on time and within budget, over 150 contractors in partnership
- Value $AUD 1.2 billion

Project lead Planner and Scheduler NZ Department of Correction

- For 3 prisons all delivered on time and below budget
- Value $NZ 1.4 billion

Raf Düa

Senior Planner / Scheduler for the Third runway at Melbourne Airport

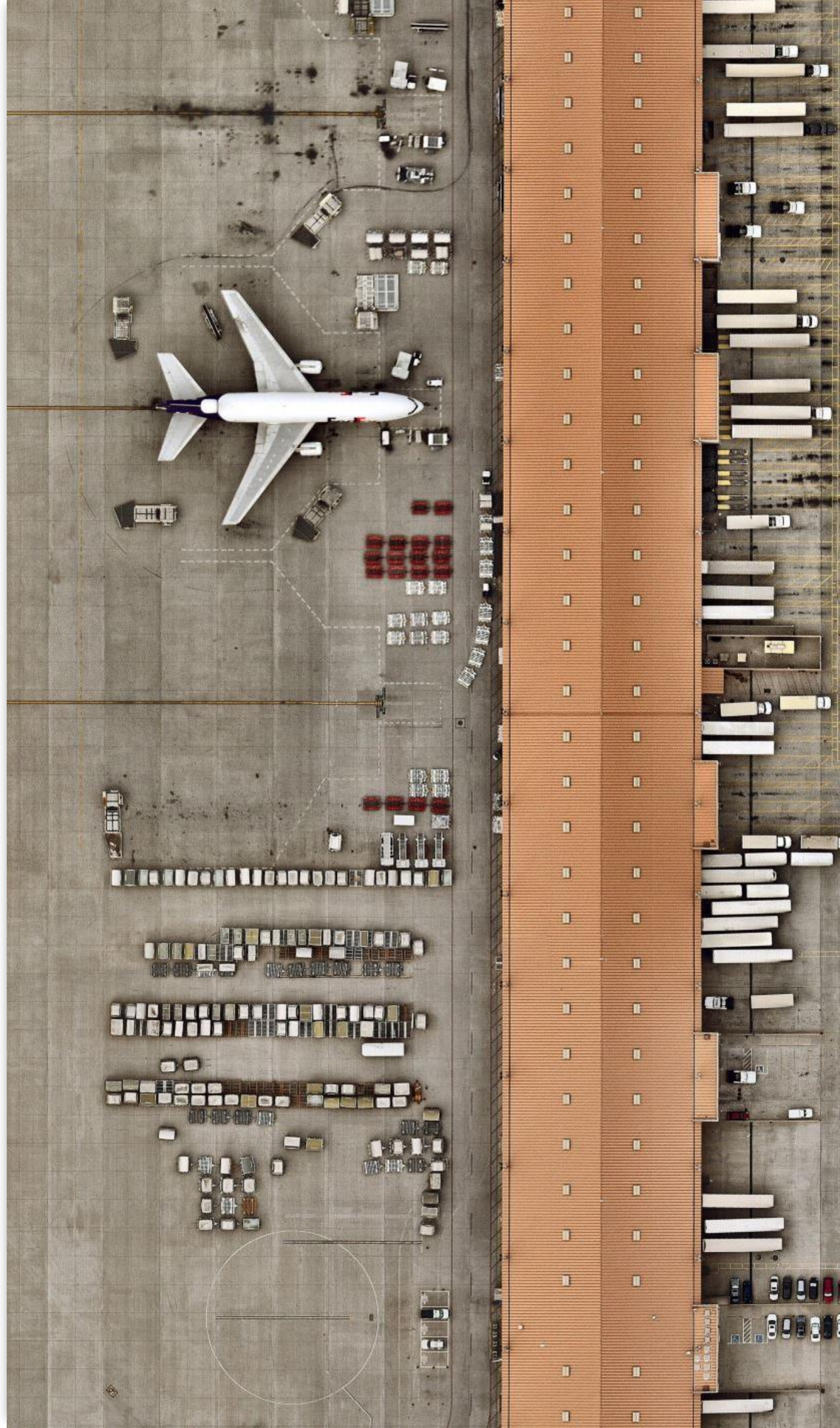
- Value $AUD1.8 billion

Forensic Planner / Scheduler for the Sydney Water Board

- Five year forward projects, portfolio and programmes
- Value $AUD 1.7 billion

Director Scheduler for the Jewel of the Creek major Housing Development project in Dubai,

- Created the master program and statused for three years
- Value $USD 10 billion



• Raf’s Software – Micro Planner X-Pert

- **Micro Planner X-Pert was used by a dedicated team working for seven years in total secrecy developing the new B-2 Strategic bomber with the Northrup Corporation top-secret Skunk works.**
- **The public “rollout” ceremony was on 22 November 1988**
- **These B2’s have been an open secret for a number of years and have been scrambled by President Trump in June 2025**

What Problems Will Be Solved?

The market has not caught up with the product.

The product has used the standard methodologies of CPM from day one. It has successfully done this since it's first release in 1978 through to its last update in 2008 AND has successfully run since 2008 without problem. Now in the cloud

Users still swear by it as it the only software that TRULY solves all the items that modern project planners whinge about:

1. **First Principles** – Using the CPM methodologies MicroPlanner Xpert uses foundational first principles to build correct FROM THE START.
2. **Reforecasting** – X-Pert can reforecast the schedule as the project progresses given the inevitable changes that occur in EVERY project.
3. **Baseline** – X-Pert establishes the baseline to ENSURE the delivery of the Project – FEL – Front End Loading.
4. **Sourcing & Procurement** – Successfully manages ALL resources for the implementation of the project – including SPACE!!
5. **Baseline** – X-Pert established a baseline using earned value, then uses this to manage the project.

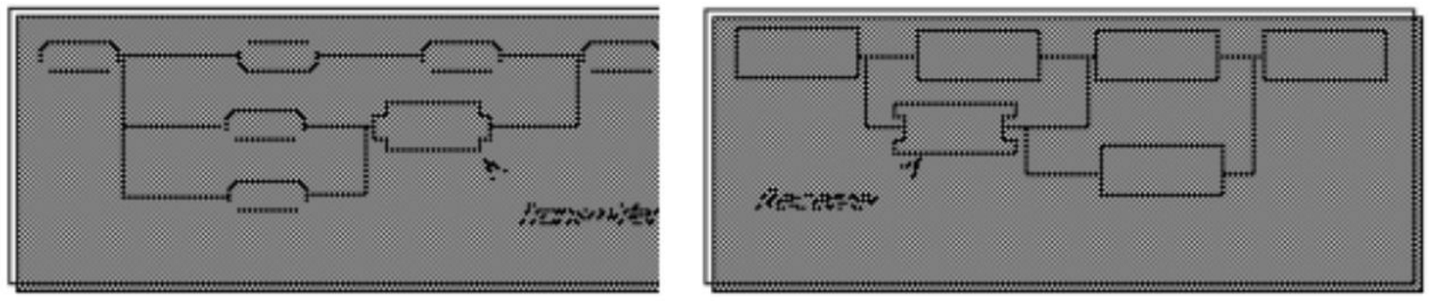
What Problems Will Be Solved?

6. **Risk Management Through Accurate Forecasting** – Up front validation of the entire contractual program by establishing the ‘S’ curve by means of the Normal Distribution Beta curve.
7. **Reporting**: Progress and Status – X-Pert has standard and specific reports that provide clarity and accuracy across the entire project. Where details matter – Xpert has you covered.
8. **Software as a ‘Problem’** – X-Pert removes this problem and allows you and your team to focus on the delivery of the project, rather than remaining hyperfixated on the software.

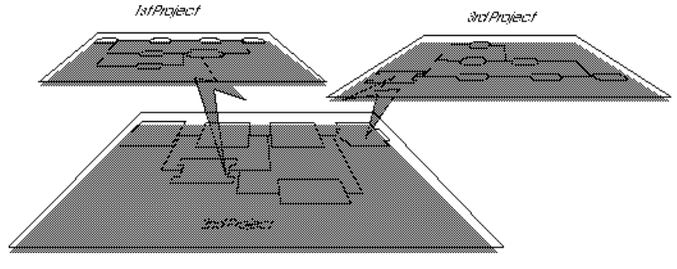
Functions Unique to X-Pert

1. Transmitters and Receivers

Transmitters are inserted as nodes, anywhere in any project. They are linked to the remaining logic in the usual way and do not affect Time or Resource Analyses in any way. They act as probes that broadcast the dates that they were achieved during the most recent Time or Resource Analyses.



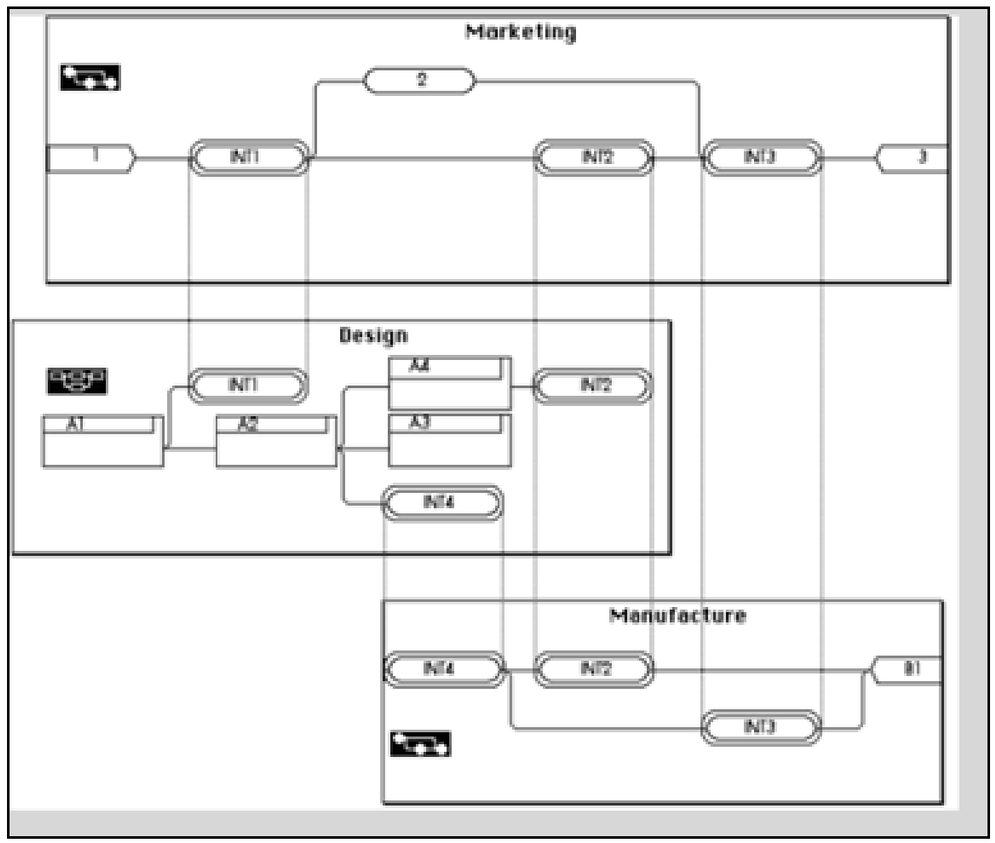
These transmissions can then be picked up by other projects via Receiver nodes.



Imagine – Multiple sub projects to a parent project, all talking to one another where they affect each other! Even across multiple countries / continents

Functions Unique to X-Pert

2. Schedule in Arrow and Precedence



Imagine – Customer that require both – Instantly catered for!!

Functions Unique to X-Pert

3. Elastic Activities

Elastic Operations

So far you have seen that Resource Analysis delays an operation until *all* its resources become available. An *Elastic* operation, on the other hand, can start as soon as *some* of its resources are available and then stretches its duration to absorb any backlog.

Note: During a Deadline Critical Resource Analysis, an elastic operation will only stretch its duration as far as available float, so resources may still be overloaded.

Imagine – As soon as a resource is available, things can start, no more waiting unnecessarily!

Functions Unique to X-Pert

4. Sponge Hammocks

Sponge Hammocks

During any time slice, a Sponge Hammock lurks in the shadows until the time slice is over. It then springs into action and uses all the remaining resources of the categories that you have given it. It costs *all* those and *only* those resources that it uses.

Example: Imagine that during a Software development project there is a Sponge Hammock *'Test software'* and it uses each one of your programming staff as its resource. This Hammock effectively means *'All programmers will test the software if they have nothing else to do'*. The Sponge Hammock mops up any unused programmer time.

Imagine – Rather than accepting idle time, put those people to work!!!

Functions Unique to X-Pert

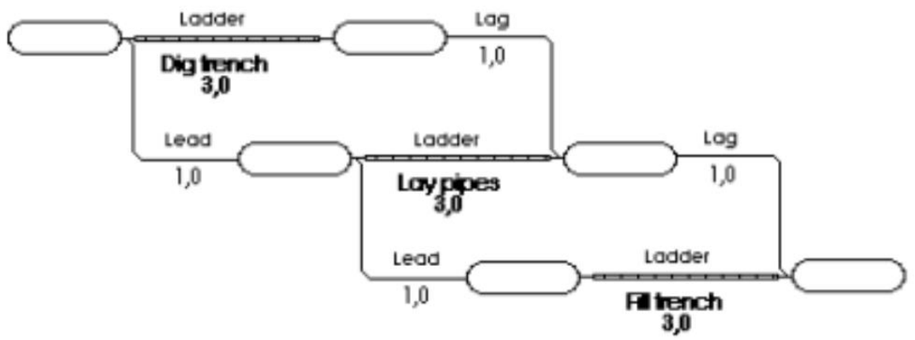
5. Ladders

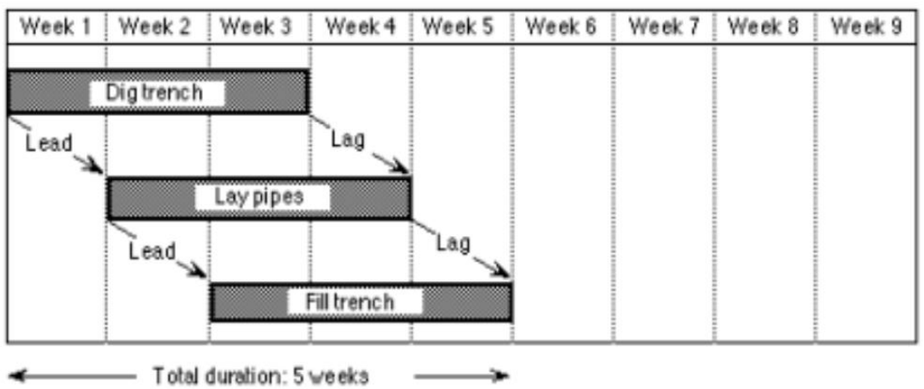
PREVENTS LAG DRAG

A problem in Gantt created schedules

Now! Suppose that instead of digging the whole trench, you need only excavate part of it before the pi laying can start. The trench excavation, however, must finish ahead of the pipe laying operation. Simil filling the trench can start (but not finish!) before the pipe laying is complete.

In these circumstances, you could save valuable time by staggering or overlapping the operations something like this...





Imagine – Saving time using ladders!!! Providing Correct Dates

Functions Unique to X-Pert

6. Consecutive Operations

Consecutive Operations

The Non-Split attribute prevents splitting during Resource Analysis. However, the start of a Non-Split operation may still be delayed even though all preceding operations are complete.

If you want to specify that a task cannot split *and* that it *must* start as soon as its predecessors have been achieved, then it has to have the attribute Consecutive.

Imagine – If limited resources are available for say NDT after Welding, to automatically see that there may be an overload when you have specified not to overload!! Early warning of a potential delay

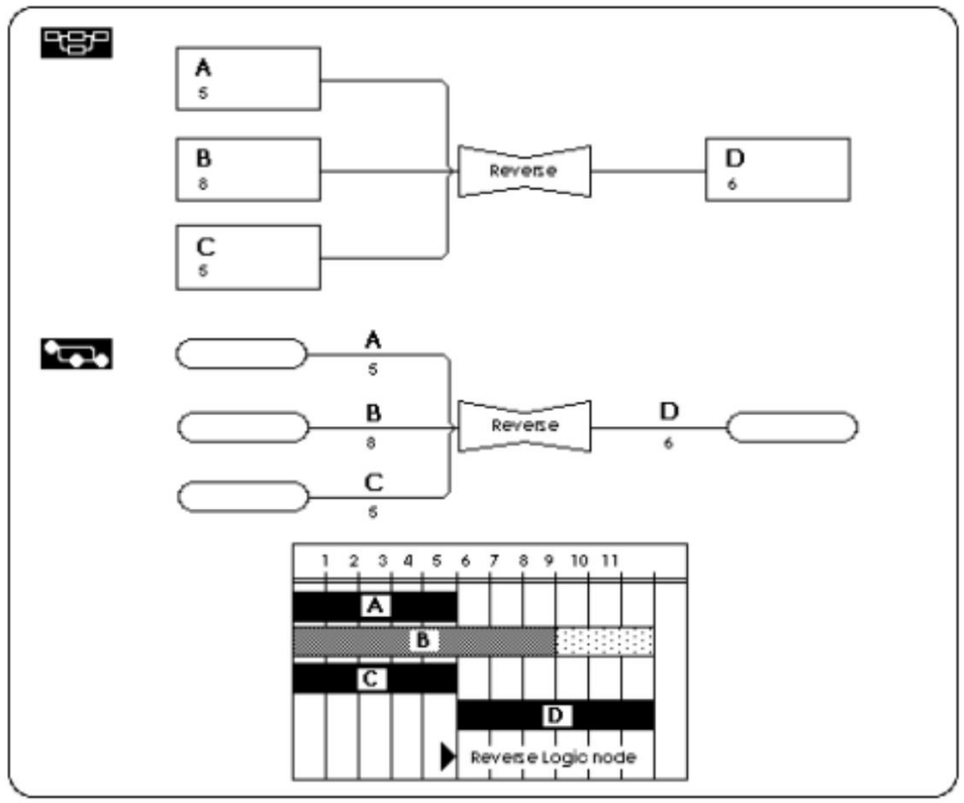
Functions Unique to X-Pert

7. Reverse Logic

OR Node Short Path Indicator

Reverse Logic Nodes

Unlike an ordinary node that can start only when all preceding operations have been completed, a Revers
Logic node is able to start when the *first* of its predecessors is complete.



In the above example the Reverse Logic node can start once **A** (or **C**) is complete. This means that **B** misses the boat!

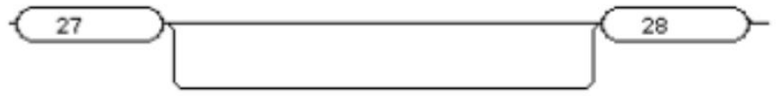
Imagine – No more 'Waiting' - Start Sooner

Functions Unique to X-Pert

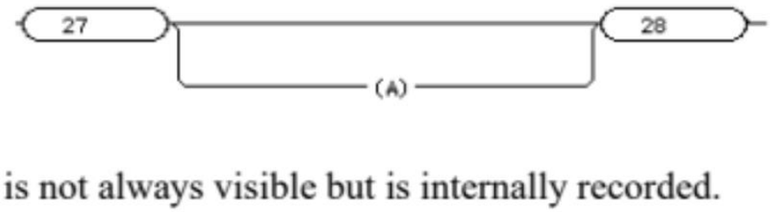
8. Activity Uniqueness

Activity Uniqueness

There is no reason why two activities cannot start and finish at the same events...



To maintain the activity uniqueness, *Micro Planner* alphabetically labels each parallel activity like this:



This **Uniqueness Identifier** is not always visible but is internally recorded.

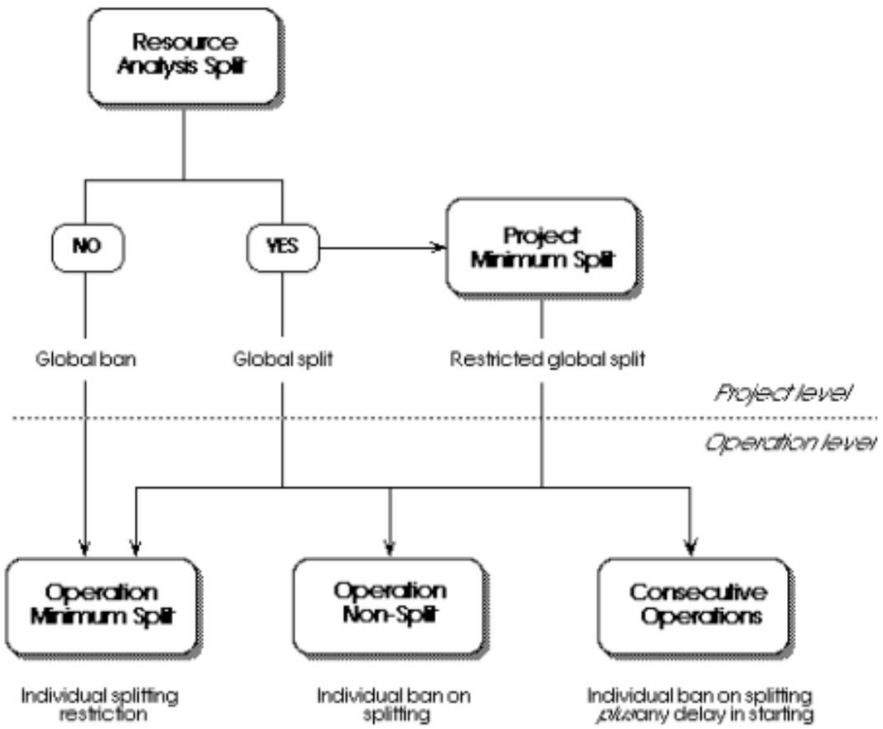
All US and most European software produced insists on the dummy. Uses up space and a source of many Errors

Imagine – ‘Dummy Errors’ non existent

Functions Unique to X-Pert

9. Splitting

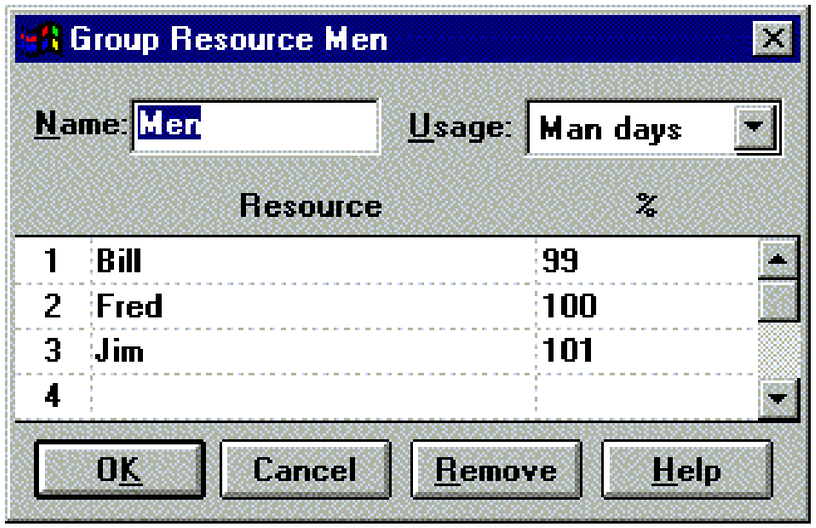
During resource analysis when a critical resource is required for a task and a non-critical task is using that resource, it can be stopped by splitting the non-critical task, depending on the amount of Free Early Float, the analysis will determine what type of split is suitable to minimise any overload in either time or resources. As can be seen below

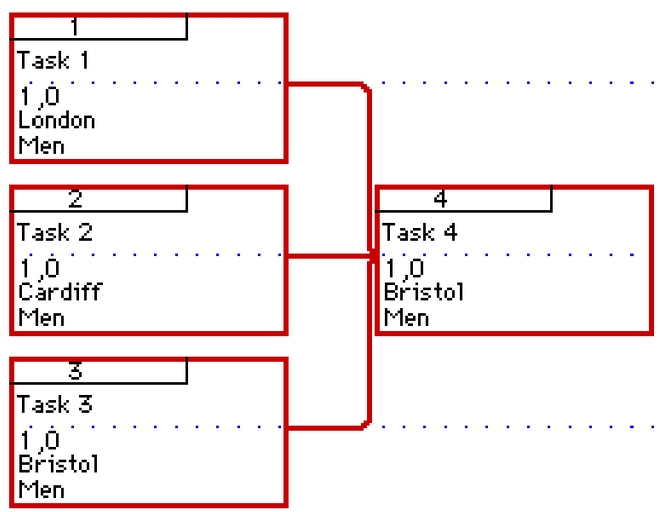


Imagine – Not having to manually manage the critical resource !!

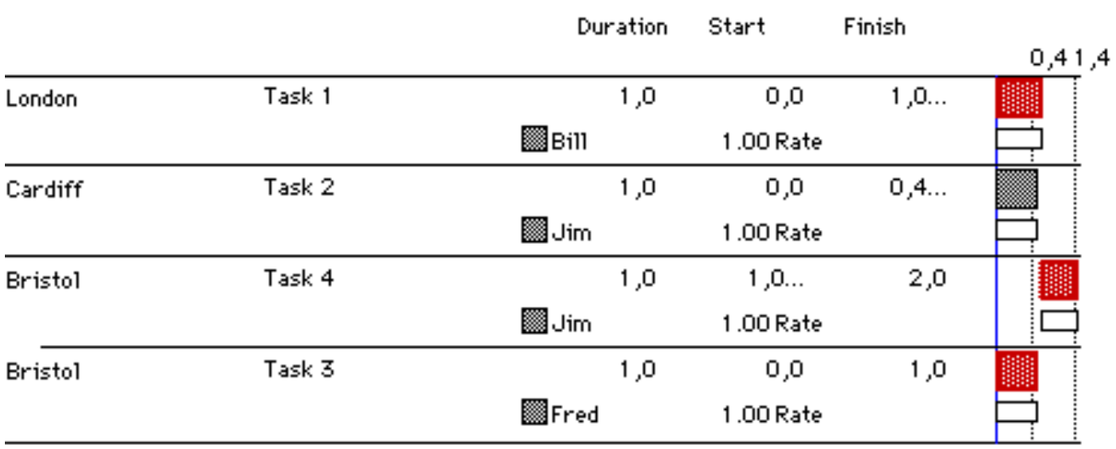
Functions Unique to X-Pert

10. Resources and ‘Location’





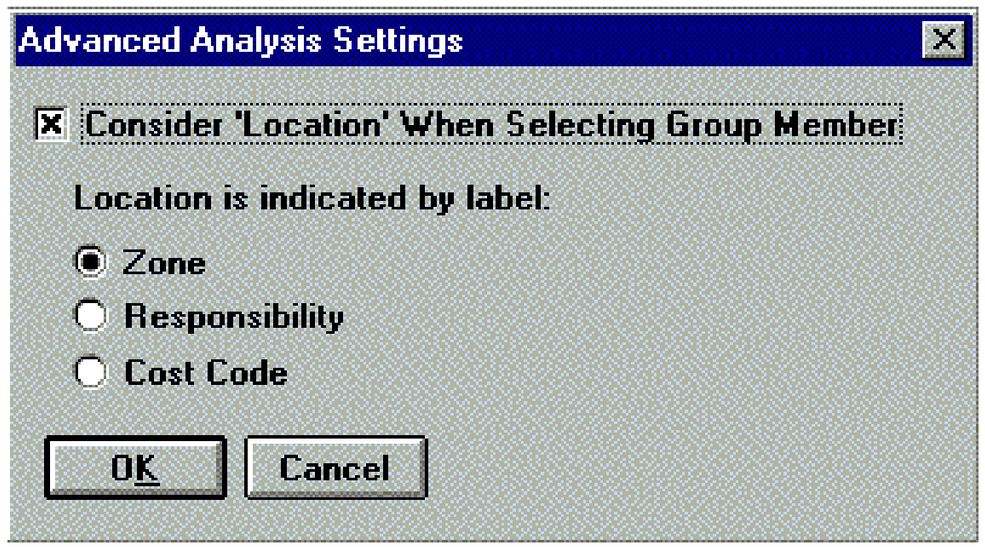
Without Location being used, the following results are obtained from Resource Analysis:



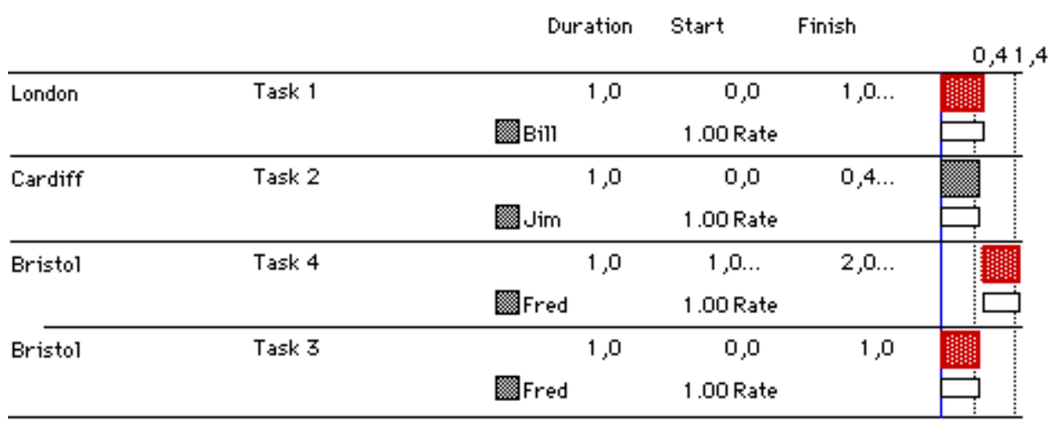
Go to Next Slide

Functions Unique to X-Pert

10. Cont'd
Resources and 'Location'



This yields the following result in Resource Analysis:



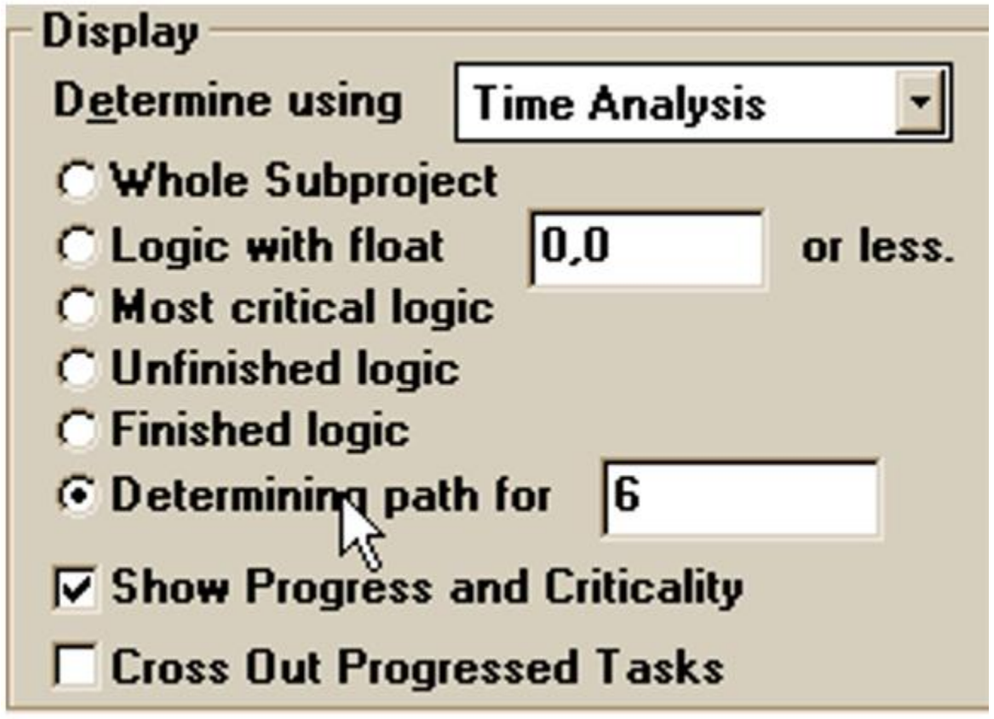
Imagine – Intelligent placement of resources

Functions Unique to X-Pert

11. Location of tasks

Determining Path

The Determining Path facility is a special kind of filter that identifies the path(s) which determine the start of a particular node or task.



Imagine – Intelligent location of the path leading to selected task

Functions Unique to X-Pert

12. Resource Type

Pool. Resource

Normal resources are those that are available for work each day (like people) whereas **Pool** resources are consumed.

An example of a Pool resource could be bricks…You could start with 5000 bricks - if 1,000 bricks are laid today then there are 1,000 less available tomorrow, and so on. Then replace them when they run out automatically

Imagine – Ability to debit and credit resource availability instantly