

## SPLITTING AND RE-COMBINING LARGE ESTIMATES

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### INTRODUCTION

When pricing large jobs in CCS there are two approaches, pricing in multi user mode on a network or splitting the job up into “sub jobs” and allowing many estimators to price “sub-jobs” and then re-combining the “sub-jobs” into the original job for final submission. Each method has its pros and cons. This TechNote explains splitting and re-combining the job. This approach is typical when pricing large multi discipline estimates using many estimators and planners. Typically each team of estimators would price a discipline of work but they would not price the same items within the bill.

This TechNote will cover the following process.

- Importing the estimate into Candy.
- Preparing the estimate to enable the splitting into “sub-jobs”.
- Splitting the estimate into “sub-jobs” for pricing bill items and entering sub contractor rates in the adjudicator.
- Preparing the program and allocating the program activities to the bill items for generating forecasts and a cash flow.
- Dealing with addendums during the pricing process.
- Recombining the priced “sub-jobs” into the original job.
- Final Submission.

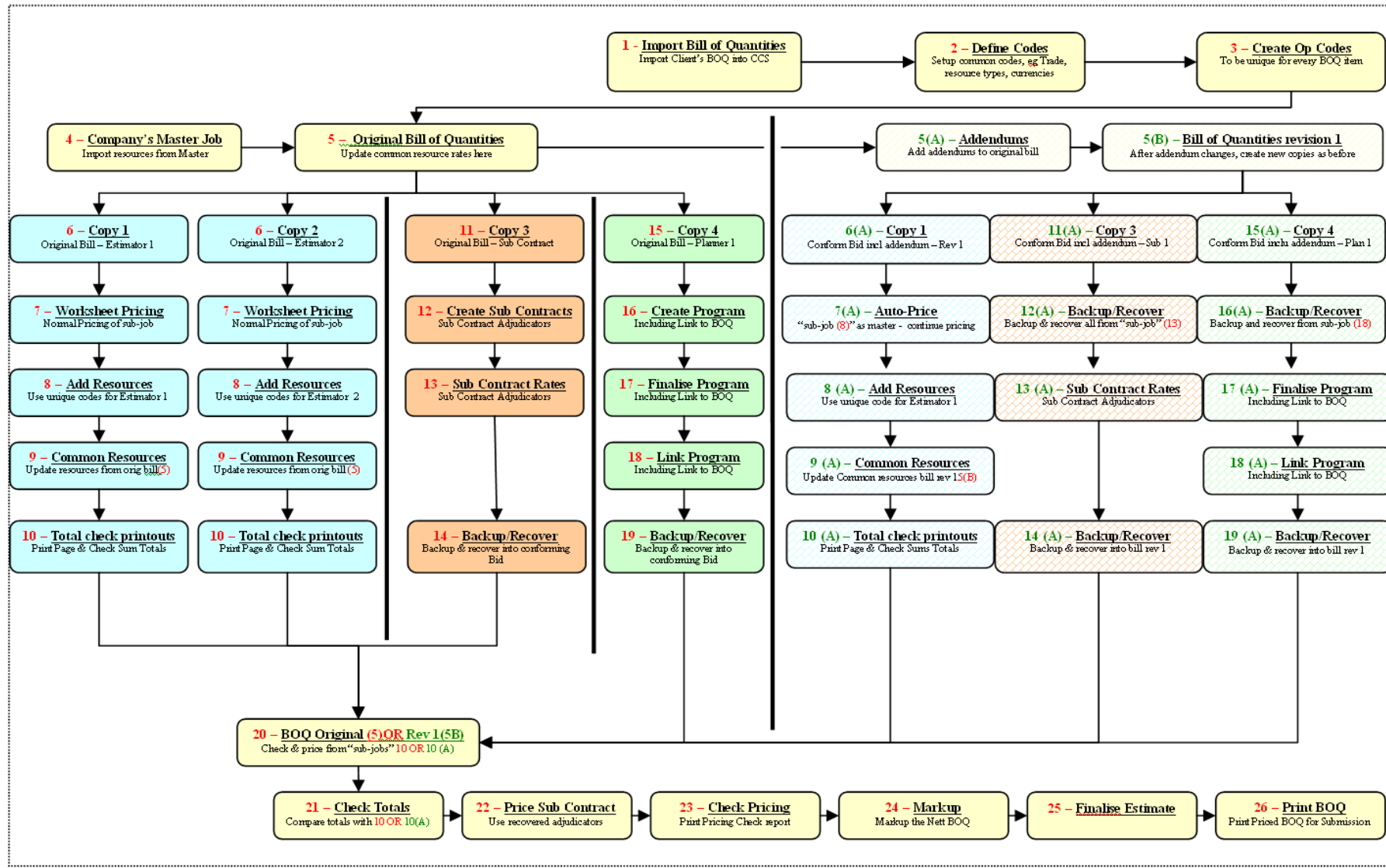
It is important to follow the processes as they are described in this document. If you deviate from this method it is very likely that re-combing the “sub-jobs” will be a very difficult manual exercise.

It is important that the estimating teams are disciplined in implementing these steps. The senior estimator will be responsible for the following processes.

- Import Clients Bill of Quantities into CCS.
- Define coding such as Trades, Resource types etc.
- Creating the Op-Codes.
- Creating and updating the “common resources” in the original job during the pricing process.
- Checking the conforming bid
- Including addendums.
- Combining the final estimate from the priced “sub-jobs”.
- Finalising the price.
- Submitting the Tender.

The attached flow chart shows each step of the process. The steps have been numbered and these numbers correspond with the detailed description which follows the flow chart.

## Flow Chart: Splitting & Re-combining Big Estimates



## A. Preparing the estimate

### 1. Import the Client's Bill of Quantities into CCS

If the client provides the bill of quantities in electronic format for example in excel, ASCII, CSV comma delimited format, then the bill can be imported into CCS using the bill importer. Import the client's complete bill of quantities into CCS as if the job was going to be priced by one estimator. This bill of quantities will become the "Original" conforming bill of quantities.

**NOTE:** If the bill of quantities is not setup as one bill at this stage, it will not be possible to merge the "sub-jobs" into the Original bill at a later stage. The links to the sub-contract adjudicators and the link between the program activities and bill items will be lost during the merging process. It is vital that the original job is setup as one job at this stage.

### 2. Define Codes

The following codes should be defined before importing the bill of quantities. These codes must be agreed by the estimating team and they must be the same in the original bill and the "sub-jobs" throughout the pricing process. This is vital to ensure the merging of the 'sub-jobs' is a simple process. We recommend that all the codes are defined in the original bill before splitting the job into "sub-jobs" for each estimating team to price. A "sub-job" is simply a backup and recover of the complete original bill of quantities, where an estimating team prices specified items such as a particular trade, like Concrete or Formwork.

#### **Compulsory Codes**

- Trade Codes
- Resource Type Risk

#### **Optional Codes**

- Task Codes
- Resource Class Codes
- Global Variables
- Exchange Rates
- Tax Multipliers

**NOTE:** If any codes need to be added or edited after the "sub-jobs" have been created, they must be defined in the Original bill of quantities (5). The new codes can be copied from the original bill to the "sub-jobs" by using the update from master facility.

### 3. Create Unique Op Codes

It is vital to ensure each OpCode in the job is unique. Duplicate OpCodes are not allowed when splitting and re-combining estimates. Duplicate OpCodes complicate the merging process and make auto-pricing and combing the various sections into one job very difficult. There is a facility in Candy to automatically re-code all duplicate OpCodes.

#### 4. Company's Master Job

When pricing this big job there will be resources that are used by all the estimators regardless of which trade or discipline the estimator is pricing. We will refer to these resources as "common" resources in this TechNote. An example of a common resource would be a general labourer.

A "common" resource would have the exact same properties throughout the whole job, i.e. the description, unit and rate of the common resource must be exactly the same throughout the job.

These "common" resources should be created in the Original Bill(5) before splitting the job into "sub-jobs" for each estimator to price.

A good starting point for creating "common resources" would be to copy resources from your Company's Master Job(4). Most companies have a master job that contains resource build-ups from previous tenders.

New simple and complex resources that might be required to price your Original job should be introduced into the Original job now.

It is not expected that all required resources be created at this stage, only those that will be common to all sections. For adding resources after the estimate has been split see step 8 of the flow chart.

Note that there should be a logical coding structure for the resource codes and the resource rates for common resources should be updated in the Original Job (5). The common resources in the "sub-jobs" should be updated using the master update menu only.

#### 5. Original Bill of Quantities

Initially the bill should consist of all bill items, with quantities, units and unique Op Codes. Although the client's bill may be in several volumes and may have been given to the tenderer in several electronic files, it is important that ONE bill is created in CCS. One CCS bill will allow the re-combining of all the "sub-jobs", subcontract adjudicators and SitePlan programs at a later stage. The final estimate can then be analysed as a whole.

**IMPORTANT:** DO NOT ADD ANY BILL ITEMS AFTER THIS POINT. FOR ADDENDUM CHANGES SEE STEP 5(A) OF THE FLOW CHART

### **B. Splitting the conforming estimate bill into "sub-jobs"**

#### 6. Copy 1 & 2 (for the various estimators)

At this point the Original job(5) should be backed up and recovered onto as many machines as required by the different estimators and planners.

FROM THIS POINT ON:

DO NOT: Add or edit any bill items, including descriptions, units and quantities on any machine.  
DO NOT: Change Op Codes or common resources codes on any machine.

DO: Clearly define which parts of the bill are to be priced by the different estimators. A trade split is the best way to split the estimate as there is less chance of duplicate pricing of items.

11. Copy 3 (for the person(s) responsible for entering sub contract rates in the subcontract adjudicator)  
At this point the estimate can be backed up and recovered onto as many machines as is required by the different estimators and planners.

FROM THIS POINT ON:

DO NOT: Add or edit any bill item, including descriptions, units and quantities on any machine.

DO NOT: Change Op Codes or Common resources on any machine.

DO: Set up sub contract adjudicators with Page Total markers in order to facilitate the checking of the sub contract quotes.

15. Copy 4 (for the planner who will create the tender program and link the bill to the program)  
At this point the estimate should be backed up and recovered onto as many machines as is required by the different estimators and planners.

FROM THIS POINT ON:

DO NOT: Add or edit any bill item, including descriptions, units and quantities on any machine.

DO NOT: Change Op Codes or Common resource codes on any machine.

DO: The program could be created as normal within SitePlan. All linking to the bill can also be completed at this stage.

### **C. Price “sub-jobs”**

7. Worksheet Pricing  
Worksheets can be built up from scratch using resources from the common resource list. New resources can be added but must comply with the agreed resource coding structure as described in step 8.

8. Add Resources  
There will be resources required to price the current section of the bill which do not exist within the common resource list. Resources could be added at this point without affecting sections priced by other estimators as long as the following principals are followed.

DO NOT: create resource codes randomly. This could result in duplicate resource codes being created and sections priced by other estimators affected when the sub-jobs are combined.

DO: Derive a specific resources coding structure, a good idea would be to allocate a special character to each estimator pricing. He will add this character to the beginning or the end of each resource code created, because he is the only one using that character, no duplicate resource codes will be created.

DO: Only resources created by the individual estimators should be updated in the sub-job. Common resources should only be updated in the Original job (5) and the changes to the common resources will be updated in the sub-jobs by using the update from master menu option.

9. Common Resources  
At some point the common resource list which is in the Original job(5) (conforming bid) will need to be updated with the latest rates for labour, material, etc. Once the rates have been updated in the original job the common resources in the sub jobs should be updated from the conforming bid using the master reference menu.

This will ensure that the sub-jobs will have the correct resources rates for those resources that are “common” throughout the whole tender.

10. Check Totals  
Once the pricing is completed, including updating of all common resource rates from the original job (5), the page totals report must be printed in each sub-job. This report will then be used to check that the totals in the sub-jobs are the same once the sub-jobs have been re-merged into the original job(20).

#### **D. Sub Contract Adjudicators**

12. Create Sub Contracts  
Set up sub contract adjudicators with Page Total markers in order to facilitate the checking of the sub contract quotes.
13. Sub Contract rates  
Inputting the rates from large sub contractors quotes can be tedious and it is likely that mistakes will be made. It is essential that the individual page totals and ultimately the value of the whole quote equals the sub contract adjudicator and the original subcontract quote.

DO NOT: Add or edit any bill items, including descriptions, units and quantities on any machine.  
DO NOT: Change Op Codes or Common resource codes on any machine.

#### **E. SitePlan Program**

16. Create Program  
Create a fully resourced SitePlan tender program and allocate the program activities to the items in the Bill of Quantities. This will produce estimate /programme linked forecast reports and a forecast cashflow.
17. Finalise Program  
The allocations of bill items to activities should be checked, even if there is no money in the bill of quantities.  
  
Any changes which have occurred since the initial allocation, such as new bill items added through addendums (See section on addendums) or change in activities (Added or deleted) have to be checked and problems corrected.
18. Link Program  
The program activities should be allocated to the items in the bill of quantities. All required reports such as histograms and cashflows should be created for printing once the sub-jobs are combined.

**F. Dealing with addendums****5(A) Addendums**

When the engineer issues addendums, these changes need to be added into the bill of quantities in order to be priced. The following steps must be followed when adding addendums. Please note that if the following steps are not followed then problems will arise when re-combining the sub-jobs into the conforming bill.

- i. Addendum changes to be added into the original job (5).  
DO NOT: add the addendum changes into the individual sub jobs.
- ii. If additional bill items have been added, they need to be allocated with a unique Op-Code. DO NOT use Op-Codes of deleted items.
- iii. Update all common resources as required.

**5(B) Bill of Quantities revision 1 (5B)**

The original job (5) has now been replaced by the revised job (5B) which includes addendums.

The revised job (5B) is un-priced and should be distributed to the required estimators, planners and subcontract rate entry personnel as before.

**6(A) Copy 1**

At this point the revised job (5B) should be backed up and recovered onto all machines as previous.

FROM THIS POINT ON:

DO NOT: Add or edit any bill item, including descriptions, units and quantities on any machine.  
DO NOT: Change Op Codes or Common resource codes on any machine.

**7(A) Auto-Price**

The priced worksheets contained in the previous priced sub job (10) estimate should now be copied over into the new estimate.

- i. Set the previous priced sub job (10) as master to the copy of the revised job (6(A)).
- ii. From the master reference menu copy all resources across.
- iii. From the pricing menu use the auto-pricing facility to price all items.
- iv. Do a trade total and page totals report. Compare the totals of the revised job (7(A)) to the priced sub job(10)

Auto-Pricing can be carried out at any point in the process, however once items have been auto-priced they cannot be overwritten by a second auto-pricing, without first deleting the worksheets and resources.

Once the above process has been completed, the estimator can carry on working in the revised job(7(A)) without affecting the merging process.

**8(A) Add Resources**

Continue as per section 8 of the above flow chart.

**9(A) Common Resources**

Continue as per section 9 of the above flow chart.

- 10(A) Check Totals  
Continue as per section 10 of the above flow chart.
- 11(A) Copy 3 for sub contract rate input  
At this point the revised job (5B) should be backed up and recovered onto all machines as previous.  
FROM THIS POINT ON:  
DO NOT: Add or edit any bill item, including descriptions, units and quantities on any machine.  
DO NOT: Change Op Codes or Common resource codes on any machine.
- 12(A) Backup/Recover  
From sub-job (13) where the sub contract rates have been entered, backup all the sub contract packages only using the backup ALL softkey found on the sub contract package manager.  
Now recover the sub contract packages backup into the revised sub-job (12(A)).  
After the recovery process is completed, check for new items to be added in the various sub contract adjudicator packages. Addendum items may need to be included into the relevant sub contract packages.
- 13(A) Sub Contract Rates  
Continue entering sub contract rates as per step 13.
- 14.(A) Backup/Recover  
Continue as per step 14
- 15.(A) Copy 4  
At this point the revised job (5(B)) should be backed up and recovered onto all machines as previous.  
FROM THIS POINT ON:  
DO NOT: Add or edit any bill item, including descriptions, units and quantities on any machine.  
DO NOT: Change Op Codes or Common resource codes on any machine.
- 16(A) Backup/Recover  
Backup the SitePlan programs from the original sub job (19) using the backup ALL softkey found on the SitePlan program manager.  
Recover the SitePlan backup into the copy revised sub job (16(A))  
After the recovery process is completed, check for new items to be linked to the program and continue working
- 17(A) Finalise Program  
Continue as per step 17 of the flow chart.
- 18(A) Link Program to the BOQ  
Continue as per step 18 of the flow chart.
- 19(A) Backup/Recover  
Continue as per step 19 of the flow chart.

**G. Merging or Combining the sub-jobs into one job**

20. Original BOQ (5) or the revised BOQ (5(B)) now referred to as Original job(20)

The following process will be described assuming that there has been no addendums. In the event that there has been an addendum added, substitute the sub-job (10),(14),(19) with the revised sub jobs (10(A)), (14(A)), (19(A)).

Enter the original job (20) and make sub-job(10) the master. From the master references menu use the master conflicts reports to check for any conflicts between the original job (20) and the sub-job(10). All conflicts should be corrected before auto-pricing.

The above conflict check must be repeated for all sub-jobs that will be merged into the original job (20). Therefore all copies of sub-job (10), job (14) and (19) and all conflicts corrected.

If any errors are corrected remember to re-print the total check reports in jobs (10), (14) and (19).

20. Autoprice job (20) from sub-jobs (10)

The priced worksheets from sub-jobs (10) can now be copied into the original job (20)

- i. Enter the original job (20) set the previous priced sub-jobs (10) as the master and autoprice the worksheets using the autoprice facility on the pricing menu.

Auto-Pricing can be carried out at any point in the process, however once items have been auto-priced they cannot be overwritten by a second auto-pricing, without first deleting the worksheets and resources. Alternatively a back up of the un-priced bill can be kept which can be used to overwrite an estimate which has had a first run of auto-pricing.

14. Backup/Recover sub contract packages

Enter sub-job (14) and backup all the sub contract packages using the backup ALL softkey found in the sub contract package manager. The sub contract packages should be recovered into the original job(20) using the recover ALL softkey found on the sub contract package manager.

Note: If sub-contract packages have been entered on more than one computer, each individual package will have to be backed up and recovered one at a time.

19. Backup/Recover the SitePlan Program

Enter sub-job (19) where the program has been created and use the backup softkey on the program manager to backup all the programs. The program(s) should be recovered into the original job (20) using the recover softkey.

20. The merged Original Bill of Quantities Conforming Bill of Quantities (20)

The merged BOQ(20) should now contain all the resources, worksheets, sub contract adjudicators and programs from the sub jobs (10) (14) (19).

21. Check Totals

Once the pricing is completed, including updating of all resource rates. The page total reports must be printed and compared for the sub-jobs (10) and the merged original bill (20).

22. Price Sub Contracts

The items that are going to be priced using sub contractors can now be priced by transferring the rates from the sub contract adjudicator to the relevant bill items in the bill.

The sub contract adjudicator has many facilities available to generate a sub contract comparison, taking into account un-priced items, included or excluded items and building up rates from other sub contractors or internal rates.

Rates entered into the sub contract adjudicator which are not part of the original quote must be marked as provisional. This will allow the total value of the sub contract quote after adjustments, less the value of provisionally rated items, to be reconciled with the value of the original quote.

23. Check Pricing

All the resource rates and bill items rates needs to be checked and updated where required. Good practise would be to print the confidence check report and the pricing check report and address the problems highlighted by these reports.

Analyse the job using Task codes, this will provide derived rates for Tasks which can be compared to previous jobs. This will provide an indication of which items in the job need to be reviewed.

The value analysis report will indicate which items contain the most value.

Ensure the senior estimator has approved all pricing before the estimate is finalised.

**H. Finalise Estimate**

24. Mark-up

Mark-up the job using Trade, Individual and resource type risk mark-up. The selling rate can also be used.

25. Finalise Estimate

Finalise the estimate as per your company's finalisation process. At this point all cash flows, forecasts and histograms should be printed.

26. Print BOQ

Print the bill of quantities for final submission.