

Chapter 10 – ENHANCE WORK SAS-028: CBS

10.1 INTRODUCTION

The SAS-028 Task Group related to cost structures and life cycle costs for military systems developed a NATO generic cost breakdown structure and associated definitions that can be used by any military programme to construct its own bespoke and programme specific cost breakdown structure.

It has been found that most nations have not adopted the generic cost breakdown structure reported in SAS-028 as their national life cycle cost breakdown structure. However, the NATO generic cost breakdown structure has been applied on specific programmes and some areas of enhancement are suggested.

10.2 RATIONALE

The application of the outputs of the report has shown that some difficulties had been met when the aggregation of the cost elements was performed (application of the construction of CBS Chapter 12 of the RTO-TR-058 report). In fact, the coding proposed in the report during the identification process of the cost elements (Chapter 9 of the RTO-TR-058 report) allowed the definition of a CDB (cost database). This coding was very useful for the identification of the three dimensions (Activity, Product and Resource) and the phase of the programme, but it could not easily define particular positions of specific cost elements inside the cost breakdown structure.

Although the NATO GCBS coding was a useful starting point it appeared that the different stakeholders evaluating the life cycle costs also needed (due to financial provisioning) a simple codification in order to identify where the various cost elements were within the cost breakdown structure. The following example provides an explanation on this issue:

Consider the cost element ‘total contractor labour costs for manufacturing rework on the air vehicle’s air/speed brakes’, it is coded 6.1.1.5.2.1.1.1.1.8 (see Chapter 9 of SAS-028 report):

- The first field is related to the Phase (Production generic code 6).
- The second field is related to the Resource (Contractor Labour generic code ‘1.1’).
- The third field is related to the Activity (Rework Modification generic code ‘5.2’).
- The fourth field is related to the Product (Main System generic code ‘1’).
- The fifth field is related to the Product Detail (Air Speed Brake standard or customised code, here, 1.1.8).

This coding structure does not help the non-expert to understand or find where a specific cost element is within the overall cost breakdown structure. It is therefore proposed to create:

- A ‘generic hierarchy’ of the cost breakdown structure with an incremental coding.
- A new presentation of the generic cost breakdown structure form allowing the link between the CDB and cost breakdown structure coding.

10.3 GENERIC HIERARCHY

This generic hierarchy is based on the cost breakdown structure activities defined in Chapter 8 of the RTO-TR-058 report. Figure 10-1 shows this generic hierarchy. The cost aggregates are defined up to the second level.

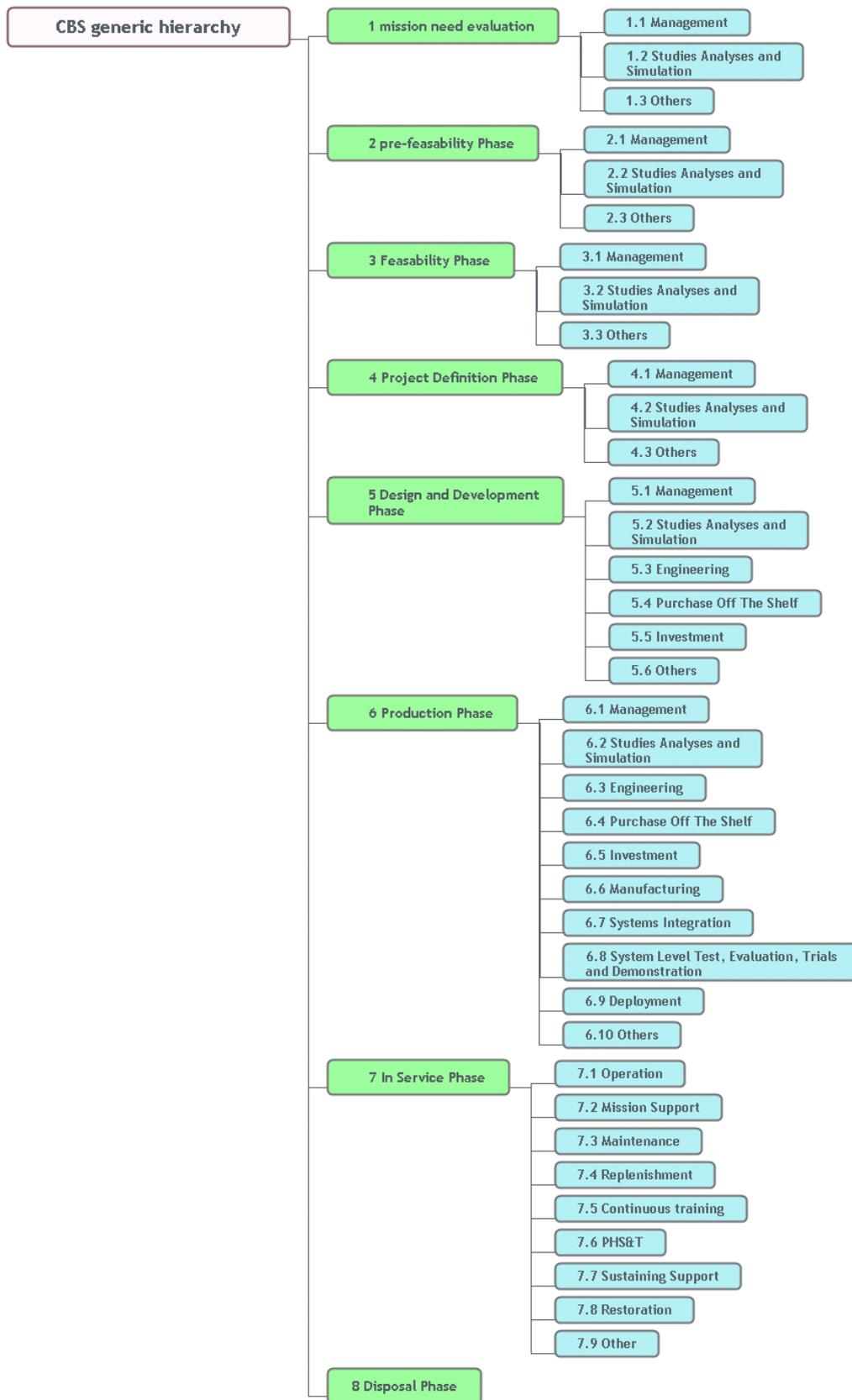


Figure 10-1: Proposed Generic Hierarchy Cost Breakdown Structure.

Once this generic hierarchy and its related coding have been set up, the different cost elements can be assigned to the appropriate cost aggregate. A coding related to the cost breakdown structure (incremental) could therefore be attributed to these cost elements.

Consider the same example as above and assume that this cost element is the first of the appropriate cost aggregate, it could be coded 6.7.1 in the cost breakdown structure as it is related to the production phase/system test and evaluation (6.7). Therefore, for communication purposes between the stakeholders, the codification would be 6.7.1 instead of 6.1.1.5.2.1.1.1.1.8.

If this structure is not uniformly adopted by all the nations then some form of mapping will have to be conducted to meet all the national and multi-national life cycle cost reporting requirements.

10.4 GENERIC COST BREAKDOWN STRUCTURE FORM

In the SAS-028 report, there are two possible types of presentation (table and list) proposed. It is suggested that the introduction of the above described coding in the table form is conducted as well as the identification of the different dimensions for each cost element. The figure below shows an example of this presentation. This presentation is given for a specific cost aggregate, but it is also applicable to the other cost aggregates.

Consider the in-service phase/maintenance (7.3) and then consider three different cost elements:

- Level 1 maintenance government labour cost for the main system.
- Level 3 maintenance contractor labour cost for the main system.
- Level 3 maintenance contractor material cost for the main system.

The presentation for this aggregate is given in the following matrix:

		Phase	Resource	Activity	Product
	7. In Service Phase				
	7.3 Maintenance				
CBS coding	7.3.1 Level 1 government Labour	7	2.0	3.1	1
	7.3.2 Level 3 Contractor Labour	7	1.1	3.3	1
	7.3.3 Level 3 Contractor Material	7	1.2	3.3	1

CDB coding

Figure 10-2: Example of Aggregated Cost Elements.

10.5 DIMENSIONS

Leading on from the presentation above, it is suggested that an additional dimension could take into account the nation dimension in multi-national programmes. The cost sharing between the nations should be identified in the life cycle cost model, therefore the distinction of the cost elements according to the nations should be set up in the cost breakdown structure.

In addition, in order to be more precise in terms of time, it is suggested that customisation for each phase dimension in the payment profiles should be determined in accordance with the specific requirements of the programme.

For example, during the production phase, the deliveries of the systems could last many years (particularly in multi-national programmes), therefore the payment schedule could be different from one delivery to another. This would lead to different payment profiles related to the different deliveries.

Taking account of these profiles within the cost breakdown structure could improve the presentation of individual budget forecasts.

10.6 RECOMMENDED ENHANCEMENTS TO THE NATO GCBS

The NATO Generic Cost Breakdown Structure developed by the SAS-028 Task Group does not allow the identification of the Life Cycle Cost results over time and the National contribution in case of multi-national programmes. Therefore, it is recommended to include two dimensions in addition to the Activity, Product and Resource dimensions:

- Time phasing; and
- National contribution.

As the coding of the Generic Cost Breakdown is complex for non-experts, it is recommended to adopt a Generic Hierarchy for the GCBS.