Detailed Valuation Methodology

15 August 2014

1. Contents

1. Introduction

1.1. General

In this document, we describe the specific valuation methodologies used to value our Non-current Assets in the preparation of the Current Cost Financial Statements (also known as the RFS – Regulatory Financial Statements).

BT's fixed asset register categorises our assets into a range of sub-accounts known as classes of work (CoW). These CoW describe the type of asset in detail and are an appropriate level of granularity for us to make our valuation decisions. In the presentation of the RFS we group them into a smaller number of asset categories. Details of the CoW included under each asset category are provided in Annex 4.

Our fixed asset register also provides some additional detail which allows us to go down to an additional level of detail (known as policy codes) and our financial systems allow us to disaggregate capital expenditure into pay, materials and contracted work. This additional detail is used in the valuation methods where appropriate.

1.2. Basis of Preparation of the Regulatory Financial Statements

The RFS are prepared under the financial capital maintenance (FCM) convention using the principles set out in the Report to H. M. Treasury (1986) "Accounting for Economic Costs and Changing Prices" and the handbook "Accounting for the effects of changing prices", published in 1986 by the Accounting Standards Committee.

Under the FCM convention we include changes in asset values in our income statement as unrealised holding gains or losses. Normally a general inflation adjustment for the erosion in the purchasing power of shareholders' equity would also be applied, but this adjustment is not included in regulatory reporting.

1.3. Principles of Valuation of Non-current Assets

Assets are stated in the balance sheet at their value to the business, usually equivalent to their Net Current Replacement Cost (NRC). This is generally derived from the asset's Gross Replacement Cost (GRC) which is the current purchase price of an identical new asset or the cost of a modern equivalent asset (MEA) with the same service potential.

In line with the FCM concept, the effect of the asset revaluation on the income statement is to increase the historical cost profit by any unrealised holding gains (UHG) arising in the year and to decrease it by unrealised losses. We allocate Current Cost Accounting (CCA) adjustments to the income statement and balance sheet to Markets using the same principles and processes as we use for allocating the historic costs for the same assets.

The methods employed for valuing our assets are shown in the table below:

Valuation assumption	Valuation method	Example (CoW)
Existing technology	Absolute valuation Indexation Extrapolated Absolute	Optical fibre spine cable (LFSC) Duct (LDD) System X exchange switches (LDX)
Modern Equivalent Asset (MEA) – see section 1.4(ii)	Absolute valuation	21CN Combi-cards (MSANF and MSANH)
Low value, short residual life and/or minimal impact on regulated areas of BT	Historical cost	Vehicles (NVAC)

1.4. Choice of Valuation Method

The valuation methods used for the various asset categories are reviewed annually to ensure that they are still appropriate and produce robust valuations in the light of changes in technology and levels of investment. For example, when new technology is being introduced, the purchase price will represent its current cost but in later periods indexation or an absolute valuation will be introduced as prices change and/or the technology of the assets purchased is no longer the modern technology.

If the technology of the asset in place is still the current technology (subject to section (ii) following), the asset is valued on a like-for-like basis but at current prices rather than the prices when purchased.

(i) Existing technology

Where an asset is being revalued on a direct replacement basis, its replacement cost is usually assessed either by indexation, by absolute valuation or by extrapolated absolute valuation. The choice of method involves a judgement as to which method, given the data available, is likely to give a more accurate and robust valuation. Factors considered include the following:

Indexation: This is an appropriate method when there has been little technological change in the asset category and all the direct costs associated with bringing the asset into service would be incurred if it were to be replaced today. It also requires the production of an appropriate index. Net replacement cost is derived using indexation of the historical net book values – see section 1.8.

The table below shows those assets presently valued on an indexed historic basis as detailed in Annex 2.

Asset Description	CoW
Copper Dropwires	NWB & NWR
Synchronous Digital Hierarchy Equipment	SDH
Duct	LDD
Access Copper Cable	LDC
Telecom Power Equipment	TPC
Specialised Accommodation Assets	ACPN

Absolute valuation: In using the indexation method there may be difficulties in establishing appropriate indices and hence it may be more accurate and reliable to use physical volumes and unit prices to derive a full absolute valuation. This method in turn may present difficulties, for example in establishing meaningful current unit prices, so the choice of method for a particular asset depends on individual circumstances.

The table below shows those assets presently valued on an absolute valuation basis as detailed in Section 2.

Asset Description	CoW	2013/14 CCA Depreciation Method	Section ref. for detailed methodology
Access Fibre Cable	LFSC	Roll Forward	2.4.1
Backhauk/ Core Fibre Cable	CJF	Roll Forward	2.7.3
21st Century Network:			
Core Nodes	CORLU	NBV/GBV	2.7.4
Metro Nodes	METCI	NBV/GBV	2.7.4
Metro Nodes	METSI	NBV/GBV	2.7.4
Metro Nodes	METAL	NBV/GBV	2.7.4
Ethernet	ETHER	NBV/GBV	2.7.4
WDM	WDMH	NBV/GBV	2.7.4
WDM	WDM21	NBV/GBV	2.7.4
MSAN	MSANF	NBV/GBV	2.7.4
MSAN	MMSANH	NBV/GBV	2.7.4

Extrapolated absolute valuation: where there have been no significant developments in technology or underlying asset base then a full absolute valuation exercise may not be justified. In these cases we may chose to continue with previous year's valuation and then extrapolate by adding capital expenditure at cost and applying an index that reflects known price movements.

The table below shows those asset presently valued using an extrapolated absolute valuation method.

Asset Description	CoW	Date asset last valued as Absolute Valuation	Section ref. for detailed methodology
System X Exchange Switches	LDX	2008/09	2.6.1

(ii) Modern Equivalent Asset (MEA)

In situations where there is technological change, existing assets may not be replaced in an identical form. In such cases the replacement cost is based on the cost of a MEA i.e. the cost of a modern asset with similar service potential. In some cases the rate at which modern assets can be introduced is limited by practical constraints such as manufacturing and installation capacity, or lead times. The mix of technology used as the modern equivalent for valuation is generally taken as that forecast to be in place in three years' time. The problems of assessing capacity and unit costs are the same as for any absolute valuation, as described above.

Currently the only asset valued as an MEA is that of MSAN combi-cards which are valued by using the price of broadband cards. Combi-cards were installed to cater for both voice and broadband but the intention is now to only use these combi-cards as broadband cards.

No MEA changes are expected in the immediate future.

(iii) Low value, short residual life or minimal impact on regulated parts of BT

Where assets:

- have a relatively low value,
- have a short asset life and only modest price movements have been observed,
- are virtually fully depreciated,
- have been recently acquired (so the current and historic costs are similar), or
- allocation to regulated markets is immaterial,

there will be little impact on the regulatory financial statements as a result of the differences between their historic and current replacement cost. Therefore, these assets will be valued at their historic cost.

1.5. Cost Adjustments

(i) Operating Cost Adjustments

If there are material differences in operating costs between the MEA and the existing asset, the MEA valuation is adjusted to reflect these. The differences may arise, for example, due to differing maintenance costs over the whole lives of the assets.

At present, for assets valued using an MEA approach, there are no cases where the differences have been identified as significant and hence no adjustments are required.

(ii) Functionality Abatements

Where existing assets are valued using a MEA, the unit price of the modern asset may reflect a higher level of functionality than that of the existing asset. In such cases the MEA valuations of the existing assets are adjusted downwards to reflect the estimated cost of upgrading these assets to the functionality of the version used in the valuation.

(iii) Surplus Capacity

An asset is considered to have surplus capacity only if there is capacity within the asset that is not in use and not expected to be put into use over BT's planning horizon. Thus assets that have capacity planned to be

brought into use, or which are needed to meet known planning margins or network resilience requirements are considered to be part of the operating capacity.

Where there is modularity in the provisioning of capacity, provided that a part of the modular asset is utilised or will be utilised over the planning horizon, these assets are included within the operating capacity in their entirety.

BT has not identified any material groups of assets that fall within the above definition of surplus capacity that require revaluation.

1.6. New Technology and its use as MEA

Emerging replacement technologies are treated as separate asset categories until it is clear that their costs are lower than those of an older technology and that they have become the modern equivalent. For example, fibre cable is being deployed in parts of the access network but its cost is not yet low enough for it to be considered as the MEA for copper cable.

In considering the use of new technology as the MEA it is assumed that there are no changes to BT's network topology, i.e. the number of nodes and the links between them are valued in their existing configuration, not as a theoretical optimised network.

1.7. Unit Costs

Unit costs applied to capacity for absolute valuations are based on outturn prices where these are considered representative of the costs that would be relevant if the assets were being replaced at a normal rate in the normal course of business. It is possible that the prices currently being paid are unrepresentative, for example when ordering levels are particularly high or low, or at the end of a technology's life. In such cases an estimate is made of an appropriate current cost with reference to internal and external data.

1.8. Choice and application of indices for Indexation Method

We have prepared price indices for each of the Class of Works valued under the indexation method. These indices are usually composite indices constructed from Office for National Statistics (ONS) indices such as average earnings and weighted by analysis of elements of BT expenditure e.g. BT labour, contract, or stores. Annex 2 lists the indices (including their sources).

The year-end valuation for each asset is built up from historical asset data, sourced from the Group's Fixed Asset Registers. Indices at 31 March (current year) are used in the year-end valuations in conjunction with the indices at 30 September in the year of registration for the asset being valued, as illustrated below. Use of the mid-year indices reflects the fact that the assets are purchased throughout the year; thus the current year historic cost accounting (HCA) additions have six months' indexation applied to them to derive their CCA value.

Example for an asset being valued at 31 March 2014:

Year of Registration:	GBV additions in the year	GRC additions in the year
1990/91	A	A x Index @ 31/3/14 / Index @ 30/9/90
1991/92	B	B x Index @ 31/3/14 / Index @ 30/9/91
↓	↓	↓
2013/14	Z	Z x Index @ 31/3/14 /Index @30/9/12
	————	—————
TOTAL @ 31/3/14	GBV = Sum of above	GRC = Sum of above

1.9. Depreciation

Depreciation is provided on non-current assets on a straight-line basis from the time they are available for use, so as to write off their costs over their estimated useful lives, taking into account any expected residual values. No depreciation is provided on freehold land. The lives assigned are the same under both the current cost and historical cost conventions.

CCA depreciation for those assets valued on an indexed historic basis is calculated using the Indexed NBV/GBV methodology – see Annex 3.

For those assets valued on an absolute valuation basis, the CCA depreciation is derived using either NBV/GBV method or the Roll Forward method – See Annex 3 for more detail. The specific method used for each Class of Work is shown in section 2.

1.10. Disposals, write-outs and write-offs

These are derived from HCA figures and revalued using the most appropriate method for the asset being valued within the overall approach described in Annex 3.

2. Detailed Valuation Methodology

2.1. Introduction

This section provides an outline of the methodologies adopted for deriving the gross valuation and CCA depreciation.

The studies and data sources utilised in the preparation of the CCA Valuations referred to in this section are described in Annex 1.

A description of the Asset Movement Statement process for derivation of NRC including the underlying CCA movements is provided in Annex 3.

2.2. Land & Buildings

2.2.1. Property

The majority of property assets (general-purpose buildings, specialised buildings, general purpose land, specialised land and the majority of accommodation plant) are valued at historic cost. This is because only a small number of buildings are owned by BT and the CCA adjustments would be spread across a large number of services, resulting in immaterial adjustments to the individual services.

2.2.2. Specialised Accommodation Assets

These assets are all associated with creating a suitable environment for housing network equipment (CoW ACPN). The largest element is for air ventilation and air chilling equipment but also included are fire, flood and gas detection equipment, electric light and power, kitchen equipment, and intruder detection.

We value these assets using the indexed historic principles but in order to better reflect the different types of assets within this CoW we have used different indices for each type. These indices are shown in Annex 2.

2.3. Access – Copper

2.3.1. Access Copper Cable

This asset includes the overhead and underground copper cables that connect BT's exchanges to the distribution point.

The valuation is calculated using an indexed historic method. To calculate an absolute valuation for an asset of the size and complexity of the copper network requires a number of significant assumptions and estimates, which would lead to volatility in the RFS.

RPI has been selected as the most the appropriate index for this asset because of the volatility in copper commodity prices.

2.3.2. Dropwire

This asset includes the copper wire from BT's distribution point up to and including the main socket on a end-user's property. The assets are valued using an Indexed Historic method. RPI has been selected for this asset consistent with the valuation of Access Copper Cable.

2.3.3. Other Assets

ISDN2 network terminating equipment (CoW HHB, HHR & NTIS) and broadband ADSL technology (CoW ADSL) are valued at historic cost as these assets are of relatively low value.

2.4. Access – Fibre

2.4.1. Access – Fibre Cable

This asset includes the fibre cable from BT exchange to the end user's premises. The assets are valued using the absolute valuation methodology (see below).

Details of Absolute Valuation Methodology used for Access Fibre – including key assumptions and any models used.
Step 1: Input Volumes. We download volumes of cable lengths by fibre size from INS (Integrated Networks Systems). Since the cables lengths refer to each cable segment we can deduce the number of cable nodes or joints for each cable size. **Step 2:** Input Standard Task Times. We use the same work activity units as used by BT's fibre planners and adjust them by applying a ratio of total time / total planned time. **Step 3:** Input Unit Prices. We use BT's standard labour rate for engineers' pay and the latest fibre purchase prices from BT Procurement. **Step 4:** Calculation of Labour Costs. We calculate the total time required to lay the fibre cables and join them together from the adjusted volumes, adjusted standard task times and a list of detailed activities required for each cable size. We then cost the total time using the input standard labour rate. Many of the cable sizes present in the network are no longer available commercially so we use the task times required of the closest available cable size. **Step 5:** Calculation of Stores Costs. We calculate the total stores costs from the input sheath km volumes, the assumed number of nodes and the input fibre prices. For the cables no longer commercially available we use the costs of the closest available cable size. **Step 6:** The costs of planning the access fibre network are valued using the indexed historic methodology (see Annex 2). **Step 7:** Assets In the Course of Construction are valued at their historic cost. **Step 8:** Depreciation. We use the NBV/GBV methodology to calculate current cost depreciation.

2.4.2. Other Fibre Assets

The remaining assets in this category are valued at historic cost as they are of relatively low value or have been recently acquired (so the current and historic costs would be similar).

2.5. Duct

The valuation of duct is calculated using an indexed historic method. To calculate an absolute valuation for an asset of the size and complexity of the duct network would require a number of significant assumptions and estimates leading to volatility in the RFS.

RPI has been selected as the most the appropriate index for this asset (including Capitalised Planning costs) which is consistent with the treatment used by Ofcom in its Regulatory Asset Valuation (RAV).

2.6. Switch

These assets are mostly old technology with low investment and nearing the end of their asset lives. They have declining net book values and consequently the value of any CCA adjustment on regulated markets would be low. Therefore with the exception of System X exchanges all these assets have been valued at historic cost.

2.6.1. System X Local Switches

The System X Switches (CoW LDX) are valued using the extrapolated absolute valuation methodology.

Details of process used CoW LDX only – including key assumptions and any models used
We last updated the absolute valuation using 2008/09 information. Since then we have extrapolated the valuation using an indexed historic approach (see Annex 2). **The original Absolute Valuation** **Step 1:** Input Volumes: We sourced the number of lines and number of processors from EXPRES (Exchange Planning and Review System). The details of how the processors needed to be configured (e.g. the numbers of ports and signalling links) was sources from NRS (Network Records System). **Step 2**: Input Unit Prices & Initial Calculation: We used the LEMP2 (Local Exchange Modernisation Programme) contract to calculate the replacement costs of the concentrator, line card and processor. The LEMP2 model was a planning tool that contained the latest contracts and was able to take the input volumes and calculate and cost the optimal processor and concentrator configurations. **Step 3:** Calculations – contract adjustment. We transferred the initial calculation in to a BT CCA valuation model, that we call the VALP model. By 2008/09 the contract prices in the LEMP2 contract were out of date but the succeeding NP2K contract did not represent the "normal course of business" as it was agreed to cater for only repair and small volumes of new provisions. Therefore, we applied the LDX index (see Annex 2). **Step 4:** Calculations – provisioning costs. A previous study had identified the amount of provisioning costs required for the switch platform including a stock of spares, data build costs and contract supervision. These costs were updated each year in the VALP model to account for labour-rate increases. **Step5**: Calculations – non-capacity related investment. We added costs to the valuation to include investment in projects such as the modular controller and various software upgrades but only where the project could be demonstrated to provide additional functionality that added to the revenue earning capacity. This investment was initially added at historic costs. The value was indexed each year using the LDX index. **Step 6:** We have applied the LDX index to the 2008/09 absolute valuation (see annex 2). **Step 7:** The costs of planning the System X local exchanges are valued using the indexed historic methodology (see Annex 2). **Step 8:** Assets In the Course of Construction are valued at their historic cost. **Step 9:** Depreciation. We use the roll forward methodology to calculate current cost depreciation.

2.6.2. Other Local Switches

Other Local Switching Assets such as the AXE10s (CoW LYX) and Remote Concentrator Units (CoW UXD5) are all declining in value with a low level of current investment so any CCA adjustments would not be material and are therefore valued at historic cost.

2.6.3. Main Distribution Frames

BT continues to invest in adding capacity to main distribution frames (CoW LMDF) but they have a relatively low value so are valued at historic cost.

2.6.4. Operator Service Systems

These assets are declining in value with low level of current investment so therefore valued at historic cost.

2.6.5. Main Exchanges

This category includes the Main Exchange Switches (CoW MDX) and the Next Generation Switches (CoW NGN). These assets are declining in value with a low level of current investment and are therefore valued at historic cost.

2.6.6. Intelligent Network

The category includes the core Intelligent Network platforms (CoW INC) and the Interconnect platform (CoW SIGNI) which are used to support various Number Translation Services and network features. These assets are declining in value and are therefore valued at historic cost.

2.7. Transmission

2.7.1. Plesiochronous Digital Hierarchy (PDH) equipment

PDH equipment including Repeaters (CoW CRA, CRD, CRF, CRHQ) and Line Systems (LTME) and are all declining in value with a low level of current investment so any CCA adjustments would not be material and are therefore valued at historic cost.

2.7.2. Synchronous Digital Hierarchy (SDH) equipment

These assets are valued on an indexed historical cost basis using asset-specific cost trends based on index data– see Annex 2.

2.7.3. Backhaul and Core Cable (UK Transmission)

Core Copper cables (CJC CoW), Subsea Cables (BHQ CoW) and Main Core Cables (CoW MUC) are all declining in value with a low level of current investment so any CCA adjustments would not be material and are therefore valued at historic cost.

The majority of investment in core and backhaul fibre cables is now booked against Backhaul Fibre (CoW CJF) and we use an Absolute Valuation methodology.

Details of Absolute Valuation Methodology used for Backhaul /Core Fibre – including key assumptions and any models used.
Step 1: Input Volumes. We download Sheath km and Fibre km of CJF assets from INS. We make assumptions to derive the number of cable nodes or joints for each cable size. **Step 2:** Input Standard Task Times. We use the same work activity units as used by BT's fibre planners and adjust them by applying a ratio of total time / total planned time. **Step 3:** Input Unit Prices. We use BT's standard labour rate for engineers' pay and the latest fibre purchase prices from BT Procurement. **Step 4:** Calculation of Labour Costs. We calculate the total time required to lay the fibre cables and join them together from the adjusted volumes, adjusted standard task times and a list of detailed activities required for each cable size. We then cost the total time using the input standard labour rate. Many of the cable sizes present in the network are no longer available commercially so we use the times required of the closest available cable size except for activities such as jointing, where we continue to use the number of fibres in the specified cable. **Step 5:** Calculation of Stores Costs. We calculate the total stores costs from the input sheath km volumes and the assumed number of nodes and the input fibre prices. For the cables no longer commercially available we use the costs of the closest available cable size. **Step 6:** The costs of planning the backhaul and core fibre network are valued using the indexed historic methodology (see Annex 2). **Step 7:** Assets In the Course of Construction are valued at their historic cost. **Step 8:** Depreciation: we use the roll forward methodology to calculate current cost depreciation.

2.7.4. 21st Century Network

The material 21CN CoW are valued using the absolute valuation method. These assets include Metro / Core Nodes (CoWs CORLU, METAL, METCI and METSI), Ethernet equipment (CoW ETHER), Wave Division Multiplexing Equipment (CoWs WDMH and WDM21) and Multi Service Access Nodes (CoWs MSANF and MSANH).

Details of process used (21CN CoW) – including key assumptions and any models used
This process is complete separately for each of the 21CN CoW. **Step 1: Input Volumes.** 21CN a equipment volumes for year-end sourced from our Planning Assignment and Configuration System (PACS) **Step 2: Input Prices.** Latest contract prices are sourced from the latest 21CN contracts. **Step 3: Calculation of equipment valuation.** The volumes are costed up using the contract prices using detailed planning models prepared by BT's network planners. **Step 4: Calculation of labour valuation.** From analysis of the fixed asset register we are a able to identify additional direct labour costs that have not been included in the initial equipment valuation. These asset are added to the valuation at historic costs and then indexed using the average earnings with productivity index. **Step 5: Calculation of spare stock valuation.** A list of 21CN spares is obtained from the ASC/EFR database and latest contract prices are applied. **Step 6:** Test equipment, located at our research and innovation centre located at Adastral Park in Martlesham Heath, is included by searching the asset register on location but removing anything also included in step 3. **Step 7:** The costs of planning the 21CN network equipment are valued using the indexed historic methodology (see Annex 2). **Step 8:** Assets In the Course of Construction are valued at historic cost. **Step 9:** Depreciation is calculated using the NBV/GBV methodology.

The remaining 21CN assets are valued at historic cost due to the low value or immaterial CCA adjustment. (CoW NTE21, METCN and CCI).

2.7.5. Access Equipment for Leased Lines

Equipment is sited at the end-users' premises and at BT exchanges for the purpose of providing Leased Line access lines (CoW: DTTM, DTTK, DTTS, DTSW and DTTSW). These assets have a short asset life and are either heavily depreciated or only modest price movements have been observed so any CCA adjustments would not be material and the assets are therefore valued at historic cost.

2.7.6. Other Transmission Equipment

Core and Backhaul Radio Equipment (CoW TPWC) and Asynchronous Transfer Mode (ATM) equipment are declining in value with a low level of current investment so any CCA adjustments would not be material and are therefore valued at historic cost.

2.8. Other

2.8.1. Telecom Power Equipment

Telecom Power Equipment (CoW TPC) includes standby generators, switchboards, rectifiers and power racks. We value these assets using the Indexed Historic methodology but in order to better reflect the different types of assets within this CoW we have used different indices for each type of equipment (see Annex2).

2.8.2. Capitalised Systems Development and external purchased Software

These assets (CoW COMPS and COMPG) have a relatively short asset life and only modest price movements have been observed so they are therefore valued at historic cost.

2.8.3. Other non-current assets

Our remaining non-current assets have all been valued at historic cost because they:

- have a relatively low value,
- have a short asset life and only modest price movements have been observed,

- are virtually fully depreciated,
- have been recently acquired (so the current and historic costs are similar), or
- allocation to regulated markets is immaterial,

there will be little impact on the regulatory financial statements as a result of the differences between their historic and current replacement cost.

These Assets include: Vehicles, Computers, Line Testing Equipment, Payphones and Engineering Stores.

3. Bibliography

Report to H M Treasury (1986) "Accounting for Economic Costs and Changing Prices".

The handbook "Accounting for the effects of changing prices", published in 1986 by the Accounting Standards Committee.

"Current Cost Accounting - An Introduction to SSAP 16", published in 1981 by the Certified Accountants Educational Trust.

Report of the Inflation Accounting Committee – presented to Parliament by the Chancellor of the Exchequer and the Secretary of State for Trade by Command of Her Majesty - September 1975.

"Inflation Accounting – An introduction to the debate", 1983, Professor Geoffrey Whittington.

Annex 1 – Studies and Data Sources in CCA Valuations

The following studies and data sources are utilised in the preparation of the CCA Valuations as described in section 2:

EXPRES – Exchange Planning & Review System

Used for valuing Local Exchange Switches (LDX only).

This is a database holding information on Local Exchange & Main Exchange with details of units in service with current capacities and ordering information (both historic and future). It is used to provide connections data for models used in AS, CCA and LRIC.

INS – Integrated Network System

Used for valuing Junction Cable Optical Fibre (CJF) and Access Fibre Cable (LFSC)

Inventory database for BT's PDH circuits and cabling for PDH and SDH.

NRS – Network Recording System

Used for valuing Local Exchange Switches (LDX only).

This is a system that holds details of all BT PSTN network 2Mb port terminations. It allows any system between two switches to be queried and displayed, showing the switch termination details at each end. NRS allows switch port terminations to be allocated/de-allocated for the introduction/cessation of routes or systems on a route. NRS obtains a download of switch data for each switch. This switch data is downloaded on a regular basis (monthly) and any route/system changes entered on the system are validated against the switch data.

PACS – Planning Assignment and Configuration System

Used for valuing 21CN CoW.

The PACS system is used by the BT planners when planning any jobs relating to the 21st Century Network. It lists individually the equipment installed in 21CN exchanges.

Office for National Statistics (ONS)

In we use several of the ONS indices in our Indexation and Absolute Methodologies:

- ONS Producer Price Indices (PPI)

http://www.ons.gov.uk/ons/search/index.html?newquery=PPI%3A2711000000

- RPI

http://www.ons.gov.uk/ons/rel/cpi/consumer-price-indices/may-2014/consumer-price-inflation-reference-tables.xls

- Average Earnings

http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/june-2014/table-earn01.xls

Annex 2 – Indices and Trends used in CCA

The following tables show the indices and trends that are used to derive valuations for those assets using the indexed historic methodology. Section 1.8 of this document explains how these indices and trends are used to derive the indexed valuations.

TABLE 1: Indices used for Indexed Historic methodologies

Asset	CoW	Indices used with sources
Specialised Accommodation Assets	ACPN	(a) Heating and air conditioning units - ONS index: Non-domestic Cooling & Ventilation Equipment (ONS reference: Producer Price Index 2825000000) (b) Internal building work – valued at historic costs (c) Capitalised planning costs – ONS index: Average Earnings amended for productivity improvements of 2% per annum (d) All other assets – ONS index: Electrical Lighting Equipment (ONS reference: Producer Price Index 2740000000)
Copper Cable	LDC	Physical assets & capitalised planning costs – RPI
Dropwires	NWR NWB	Physical assets & capitalised planning costs – RPI
Duct	LDD	Physical assets & capitalised planning costs – RPI
SDH Equipment	SDH	We have created a bespoke BT index using the following component indices: (a) Equipment and contracted installation – A further bespoke BT index modelled from Average Earnings, RPI and observed changes in the SDH contract prices (b) BT labour – ONS Average Earnings (c) Other – RPI
Back-up Power Equipment	TPC	(a) Standby generators – ONS index: Electric Motors, Generators & Transformers (reference Purchasing Price Index 2711000000) (b) Capitalised planning costs – ONS index: Average Earnings amended for productivity improvements of 2% per annum (c) Other Assets – ONS index: Wiring Devices (reference: Purchasing Price Index 2733000000)

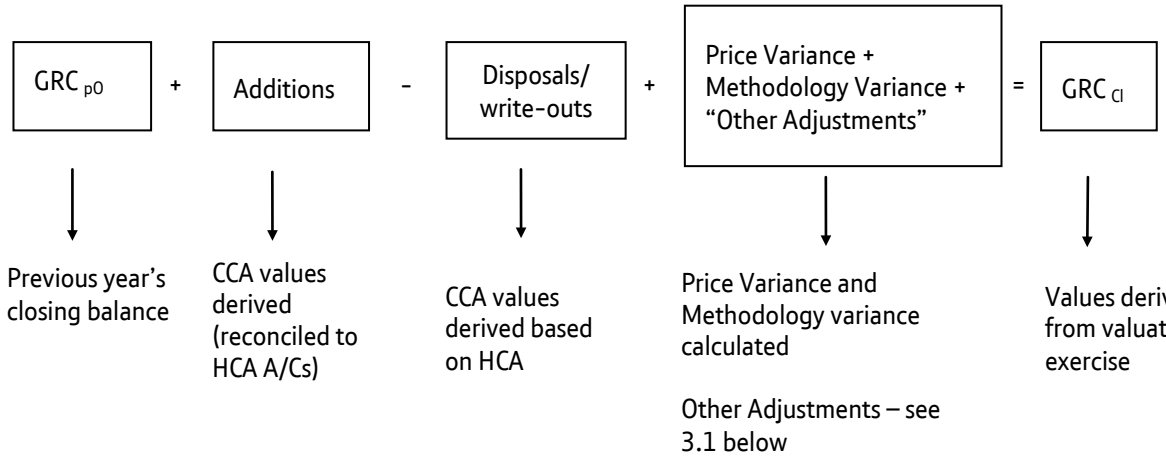
TABLE 2: Indices used within the absolute valuation methodologies

Asset	CoW	Indices used with sources
Access – Fibre Cables	LFSC	(a) Capitalised planning costs – ONS index: Average Earnings amended for productivity improvements of 2% per annum
System X Local Exchanges	LDX	(a) In original absolute valuation we used a bespoke index to apply to the 2000 LEMP 2 contract and to non capacity related expenditure. This was constructed from the following elements: i. Equipment and installation – based on changes to contract prices ii. BT Labour – ONS index: average earnings iii. Software – bespoke BT index consisting of changes in contract prices, average earnings and the ONS index: Electric Lighting Equipment (ONS reference: Producer Price Index 2740000000) (b) We extrapolated the 2008/09 valuation using this same index Capitalised planning costs – ONS index: Average Earnings amended for productivity improvements of 2% per annum
Backhaul and Core Fibre	CJF	(a) Capitalised planning costs – ONS index: Average Earnings amended for productivity improvements of 2% per annum
21st Century Network		**(a)** BT labour costs - ONS index: Average Earnings amended for productivity improvements of 2% per annum **(b)** Capitalised planning costs – ONS index: Average Earnings amended for productivity improvements of 2% per annum

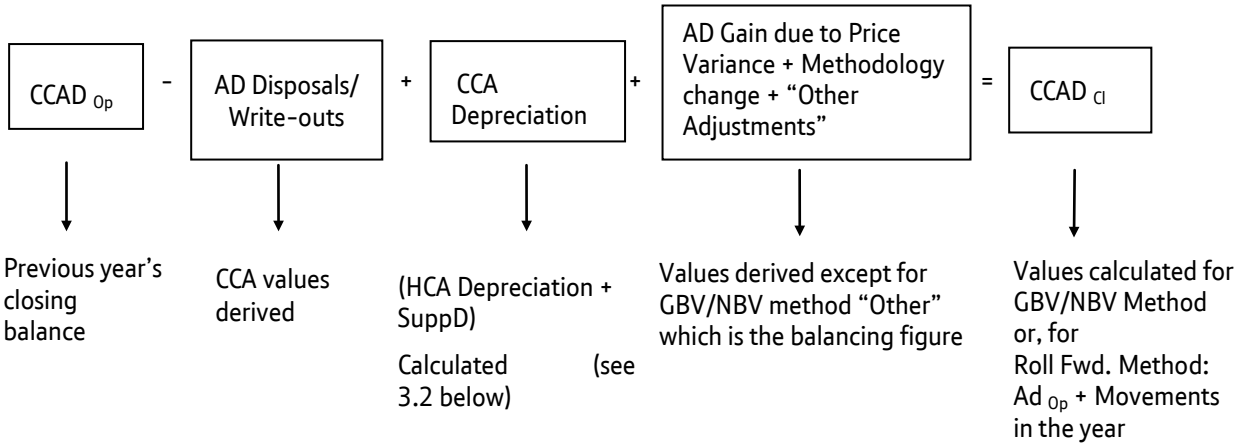
Annex 3 – Description of the AMS process for derivation of Net Replacement Cost (NRC) including the underlying CCA movements

Illustration of Pro Forma Asset Movement Statement (AMS) for CCA Valuations by Class of Work (CoW)

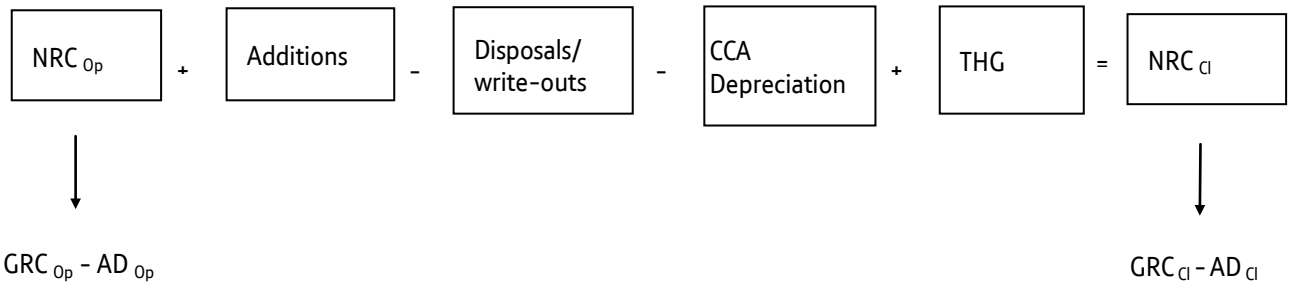
Step 1 – Gross Holding Gain (GHG) Calculation



Step 2 – Depreciation Calculations (AD = Accumulated Depreciation)



Step 3 – Calculation of NRCs, Supplementary Depreciation (SuppD) etc. (From Steps 1 and 2).



SuppD = CCA Depreciation from Step 2 – HCA Depreciation

The above diagram contains an outline of the AMS process and, to aid understanding, the following description should be read in conjunction with this diagram.

Each AMS spreadsheet pro-forma incorporates the HCA and CCA AMS schedules. The former is populated from the historic numbers and fully reconciled to the published HCA accounts. The opening balances (i.e. GRC, CCAD and NRC) are as per previous year's financial statements.

Before completing the Asset Movement Statement, the year-end gross replacement costs (GRC) are required. Explanations of the gross valuations are not included here and are covered under the appropriate sections in this document.

Once the year-end GRC for a class of work has been calculated, the following steps are followed to derive the CCA adjustments and Net Replacement Cost (NRC).

3.1. Step 1 – Calculation of Gross Holding Gain

Additions – This figure comprises two elements – the assets in service plus the movement in the AICC over the year. The valuation for assets in service is derived using the volumes of additions in the year and the latest prices. The unit price applied to the additions is the same as that used to derive the closing gross valuation. The AICC movement figure is the difference between the current year-end and opening (i.e. previous year's closing) figures reported in HCA accounts.

Disposals/write-outs – These figures are derived from HCA figures using the most appropriate method for the asset being valued.

The usual method for deriving CCA values of disposals/write-outs is as follows:

CCA value of disposals/write-outs = HCA value of disposals/write-outs x the ratio (opening GRC/opening GBV)

The HCA values of disposals/write-outs are obtained from the Fixed Asset Registers.

For assets valued on indexed historic basis - The indexed values of disposals/write-outs are derived directly from the FAR data. The indices used are the same ones as those used for deriving the indexed gross valuations.

Price Variance – the price variance is calculated by using the standard approach for variance analysis i.e. by applying the change in unit price during the year to the opening volumes (i.e. last year's closing) figures. Additionally a half year's change is applied to the net movement in the current year, to reflect that on average these occurred at the midpoint but have now moved to year end prices.

Methodology Variance – Following a change of methodology in the year, a revised valuation is derived using the same data and underlying calculations as for the previous year-end. The difference between the revised and existing gross figures gives the methodology variance

Any further differences are reported under the "Other adjustments" category; this includes any differences between the HCA and CCA additions, and any adjustments arising from the transfer of assets from one CoW to another.

3.2. Step 2 – Depreciation Calculations

3.2.1. For assets valued using absolute valuation methodology

We use two main methods as follows to calculate CCA depreciation. With both methods CCA depreciation is based on the same principles and lives used in historical accounts (as recommended by the ASC Handbook).

NBV/GBV Method

Under this method, the CCA asset is assumed to be depreciated in the same ratio as its historical cost equivalent. This means that the CCA depreciation stays in line with HCA. The following relationship, therefore, holds:

CCAD = HCAD x (GRC/GBV)

(where CCAD = Current Cost Accumulated Depreciation and HCAD = Historic cost Accumulated Depreciation)

This relationship is used to calculate the year-end CCAD. The difference between this derived figure and the opening CCAD then represents the current year's movements including the year's depreciation charge which is the balancing figure.

[Note: Depreciation for duct is derived using the Indexed NBV/Indexed GBV ratio]

Roll Forward Method

Using this approach, the opening CCAD is uplifted by price change in the year.

- Depreciation relating to disposals, write-outs and transfers is taken out

- Current year's CC depreciation charge is derived using the relationship, HC depreciation charge x (GRC/GBV)

The closing CCAD is the sum of the above items

To aid the understanding of these two approaches, the methods in context of the AMS are illustrated below. The GRC and GBV values used in depreciation calculations exclude AICC which is not depreciated.

Illustration of methods used:

(i) NBV/GBV Method

Opening Cumulative balance of CC Depreciation ($CCAD_{0p}$)	A	
(= previous year's closing balance)		
CC depreciation of disposals, calculated using the default formula:-		
(GRC of disposals / GBV of disposals) x HC depreciation of disposals	B	
CC depreciation of write-outs, calculated using the default formula:-		
(GRC of write-outs / GBV of write-outs) x HC depreciation of write-out		C
CC depreciation of transfers, calculated using the default formula:-		
(GRC of transfers / GBV of transfers) x HC depreciation of transfers		D
CC depreciation of methodology variance, calculated using the default formula:-		
GRC of method change x (opening total HC depreciation / opening total GBV)	E	
CC depreciation of "other" adjustments, calculated as the difference between:		
the Opening Cumulative balance of CC depreciation plus all movements		
and the Closing Cumulative balance of CC depreciation		F (balancing figure)
AD due to price variance, calculated using the formula:-		
[Opening Cumulative balance of CC depreciation		A
x percentage price movement for the year =		H
plus		
CC depreciation associated with Disposals	B	
+ CC depreciation associated with Write-outs		C
+ CC depreciation associated with Transfers		D
+ CC depreciation charge for the year		G

+ CC depreciation associated with Methodology Changes E

+ CC depreciation associated with Other adjustments F]

x square root of the price movement in the year= J

K= (H + J)

Closing Cumulative Balance of CC Depreciation calculated using the default formula:-

(Closing GRC / Closing GBV) x Closing Cumulative HC depreciation L

[Closing GBV is adjusted to allow for fully depreciated assets not in service which are not valued in CCA. This brings the GBV on a consistent basis with the GRC]

CC depreciation charge for the year, calculated as:-

CC depreciation charge for the year, calculated using the default formula:-

HCA depreciation charge x (mean GRC / mean GBV) G

NOTE: With the exception of price variance and depreciation charge the above formulae are the default calculation automatically performed by the pro-forma. However, there is a facility within the AMS pro-formas to input the figures manually, for example, in instances where adequate data is available at sub-CoW level to achieve an improved figure.

(ii) Roll Forward Method

Opening Cumulative balance of CC Depreciation ($CCAD_{0p}$)

(= previous year's closing balance) A

CC depreciation of disposals, calculated using the default formula:-

(GRC of disposals / GBV of disposals) x HC depreciation of disposals B

CC depreciation of write-outs, calculated using the default formula:-

(GRC of write-outs / GBV of write-outs) x HC depreciation of write-outs C

CC depreciation of transfers, calculated using the default formula:-

(GRC of transfers / GBV of transfers) x HC depreciation of transfers D

CC depreciation of methodology variance, calculated using the default formula:-

GRC of method change x (opening total CC depreciation / opening total GRC) E

CC depreciation of "other" adjustments, calculated using the default formula:-

GRC of "other" change x (opening total HC depreciation / opening total GBV) F

CC depreciation charge for the year, calculated using the default formula:-

HCA depreciation charge x (mean GRC / mean GBV) G

(GBV is adjusted to allow for fully depreciated assets not in service which are not valued in CCA. This brings the GBV on a consistent basis with the GRC)

AD due to price variance, calculated using the formula:-

[Opening Cumulative balance of CC depreciation A

x percentage price movement for the year = H

plus

[CC depreciation associated with Disposals B

+ CC depreciation associated with Write-outs	C
+ CC depreciation associated with Transfers	D
+ CC depreciation charge for the year	G
+ CC depreciation associated with Methodology Changes	E
+ CC depreciation associated with Other adjustments	F]
x square root of the price movement in the year =	⌋
	K = (H + J)

Closing Cumulative Balance of CC Depreciation calculated as:-

L = A – B – C +/- D +/- E +/- F + G +/- K **L**

NOTE: With the exception of price variance and depreciation charge the above formulae are the default calculation automatically performed by the pro-forma. However, there is a facility within the AMS pro-formas to input the figures manually, for example, in instances where adequate data is available at sub-CoW level to achieve an improved figure.

3.2.2. For assets valued using indexed historic valuation methodology

BT uses a single method for all assets valued using the indexed historic valuation methodology to calculate CCA depreciation.

The detailed records from the asset register are summarised by year of registration then indexed forward to the current year, the aggregate figure being the closing Gross Replacement Cost and Current Cost Accumulated Depreciation for the year to which is added any Late Registrations. Supplementary Depreciation is calculated using the mean GRC/GBV method. The values of other movements in the year are then calculated using equivalent HCA ratios or opening CCA/HCA ratios as appropriate.

4. Annex 4 – Linkage of DVM asset categories to Plant Groups (Attached in Excel spreadsheet format "Detailed Valuation Methodology 2014 – Annex 4")