

Connect the Classroom

***Technical Requirements***

**Document 2 of 3**

**Document Control Table**

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| **Version** | **Comment** | **Status** | **Date of Issue** | **Document author** |
| 1 | Release version | REL | May 2021 | DfE |
| 1.1 | Amendments for CTC/3 including Sustainability requirement | REL | November 2021 | DfE |
| 2 | CTC 2022-23 | REL | May 2022 | DfE |
| 2.2 | CTC2 Revision | REL | October 2022 | DfE |

Connect the Classroom

**What Department for Education (DfE) Fund Under the Programme: Scope of Works**

The purpose of this funding is to ensure that the school has a high-quality wireless network, based on the standards detailed in the current DfE’s ICT Output Specification, giving full coverage to the site and able to operate effectively as a result of appropriate switching being in place. DfE shall ensure the school has an enterprise-level wireless solution in place that should support a high number and high density of educational users.

Connect the Classroom includes:

* Equipment that has a manufacturer warranty and support arrangement (telephone, email and web), including but not limited to, licences, software and firmware updates, providing 5 years of cover as a minimum.
* WiFi 6 Certified Wireless Access Points (WAP) able to provide full internal coverage and where applicable coverage to outdoor teaching and learning spaces
* Switching that:
	+ Provides a minimum of 2.5Gbs connection to each WAP.
	+ Includes either core switch(es) set up to have redundancy, or stacked edge switches where appropriate.

It is ***not*** a requirement of the [DfE Output Specification](https://www.gov.uk/government/publications/output-specification-generic-design-brief-and-technical-annexes) (OS) that all ports on all switches be PoE and multi-gig. DfE will not approve projects with an all-PoE or all-multi-gig switch solution when lower cost units would meet the school requirement.

* Licenses to allow for a minimum of five years of operation for the switches and WAPs provided. Some manufacturers offer SKUs that give ten years of licensing for the cost of five years to projects in the CtC Programme (see SKUs and Pricing below).
* CAT6a cabling only where it is essential to provide the above. Cabling must be contained by the most cost effective method, including surface mounting.
* Connections between cabinets and buildings using OS compliant fibre, but only where the existing connection cannot support the speeds required. (see ‘existing systems’ below)
* Replacement of cabinets, where the existing provision cannot support the new switches or where an acoustic cabinet is needed to allow multi-gig switching to be deployed close to a location where the increased noise is likely to be a distraction.
* A requirement for a sustainable approach. Solutions shall be:
	+ Energy efficient by design – reducing unnecessary equipment and ensuring that it is specified to meet the requirements and not be over-specified
	+ Selected to minimise energy consumption in use – with products and systems being chosen with their efficiency being one of the key criteria
	+ Configured to maximise energy savings in-use, taking the school’s needs into account, with “sleep” or reduced power modes switched on wherever and whenever appropriate
	+ Efficient in terms of their embodied carbon, minimising transport from source, minimising waste, allowing easy recycling
	+ Ethical – wherever possible sourcing components, systems and solutions with a positive ethical sustainability footprint
	+ Implemented in a sustainable fashion – reducing waste, recycling wherever possible and minimising the carbon footprint of the planning, implementation, testing and support of the solutions. This could include, but is not limited to, the appropriate use of video conferencing to support meetings and the use of public transport and car sharing.

Listed below are some of the areas that Connect the Classroom should not include:

* Full replacement of network switching.
* IP telephony
* CCTV equipment
* Revenue services such as ongoing technical support or managed services.
* Server(s)

**Standards**

The works described above will be compliant with the School Output Specification, Generic Design Brief ([the latest](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/939186/Generic_Design_Brief_Nov_2020.pdf)  version can be found here, please refer to Section 4) except in particular circumstances where there is a strong reason to deviate from them (see Derogations below).

The standard does not specify any specific manufacturer or model, as the offer in the marketplace may change with time.

**Derogations**

DfE ICT Advisors are in certain cases able to authorise items within a project that do not meet one or more of the criteria listed within the OS. This is generally by exception only, and all derogations must be confirmed in writing and should apply only to that specific school not across a Responsible Body

Example

A wall-mounted cabinet in the school office is to house edge switching and the multi-gig switch will be too noisy for that environment. The DfE ICT Advisor would want to pursue a solution where an acoustic cabinet would make it possible to select a compliant unit. If this was not possible, the DfE ICT Advisor could issue a derogation to allow a lower-speed switch that was silent.

A multi-academy trust might have an academy in Connect the Classroom, but another 11 sites within their group, and have adopted some standards that were not fully compliant with the Output Specification. In that situation the ICT Adviser would be able to authorise the trust to use their own in-house standard for consistency on the CTC project.

**Existing Systems**

When an existing system in school (for example network cabling) is functioning to an adequate standard we reserve the right not to replace this with an item that is within the criteria listed within the OS.

Example

A school was cabled several years ago with good quality CAT6 cable that will allow the new system to operate well, except for one cable run to an access point which is damaged. DfE would not expect to fund the replacement of that CAT6 cable, even though the standard calls for CAT6A, but if a new cable run was made to the access point, DfE would expect that to be CAT6A.

**SKUs and pricing**

Some manufacturers have put in place specific prices and SKUs that they know to be compliant with the output specification. They have also made available license packs that provide for the equipment to operate without a revenue cost to the school for up to ten years. Where DfE are aware of such an offer, we will not approve quotations that do not take advantage of this. When preparing quotations, we recommend that suppliers ensure they reference these specific SKUs or pricing that are available to those schools within the Connect the Classroom Programme

You are asked to include within Document 3 (Cost Matrix and Technical Summary) details of the equipment that will allow DfE to confirm to the school that the system proposed is compliant and can be funded.

If you have any questions about the requirements – technical or otherwise - you can contact the DfE Team at ConnectTheClassroom.DfEICT@education.gov.uk either with specific queries, or to join one of our webinars for potential suppliers.