



# **Schools Internet Service Provisioning Scope**

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# 1. Introduction

This document details the various aspects of the provisioning process for the SWGfL Schools Internet “Core Service”. The provisioning process is broken down into a number of areas, including:

- Project and Service Management;
  - Technical Solution;
  - Installation;
  - Bespoke Requirements; and
  - Commercial Aspects and Terms.
- Each area is summarised below, and defined in separate sections within this document.

## 1.1. Project and Service Management

This relates to the project management approach and responsibilities, and the service management methodologies in place, to help ensure successful provisioning.

## 1.2. Technical Solution

This relates to the technical architecture of the Service, including the default configurations and active services and features.

## 1.3. Installation

This relates to the physical installation process within the Connected Establishment premises, which for some solutions can be undertaken by an engineer provided by SWGfL, and for other solutions as a ‘self- installation’ (by following a simple guide) or a ‘supported installation’ (for which a SWGfL engineer assists the Connected Establishment via a scheduled telephone call).

## 1.4. Bespoke Requirements

This relates to the option to and process for requesting, designing and deploying Services that differ from the default provision. Whilst the default configuration is usually suitable, in some circumstances Connected Establishments require adaptation of the solution prior to installation.

## 1.5. Commercial Aspects and Terms

This relates to the commercial aspect of the provision of the Core Service, and the Terms relating to the Core Service.

## **2. Project and Service Management**

### **2.1. Service Management Overview**

- 2.1.1. The SWGfL Services are delivered in adherence with ISO20000-1 and ISO20000-2: the standards and management guidelines within which the Service operates, providing a quality benchmark including:
  - 2.1.1.1. Service delivery and IT processes: implementation and operation of the Service
  - 2.1.1.2. Resolution processes: designed to anticipate, resolve or prevent serious IT incidents
  - 2.1.1.3. Control processes: risk management of solutions
  - 2.1.1.4. Release processes: managing the roll-out of new programmes
- 2.1.2. Various aspects of the Core Service are continuously monitored and managed to ensure high performance and a good user experience, including:
  - 2.1.2.1. Bandwidth: the average and aggregate bandwidth utilisation of every circuit is measured to check that there is sufficient capacity within the network and that circuit are not over-subscribed;
  - 2.1.2.2. Speed: the actual capacity of every circuit is measured to check that there is no physical degradation of circuits;
  - 2.1.2.3. Latency: the average time taken for a packet of data to travel through the network is measured to check that download and upload speeds are within an acceptable range for the access circuit provided;
  - 2.1.2.4. Jitter: the average variation in latency is measured to check that variations do not cause performance issues;
  - 2.1.2.5. Packet Loss: any packets that fail to reach their destination are measured to check that no network issues are preventing traffic from reaching its destination; and
  - 2.1.2.6. Hardware performance: the average load on CPU and average memory of each CPE is measured to check that hardware components in the network are functioning correctly.

### **2.2. Project Co-ordination**

- 2.2.1. The provisioning process for a single site is allocated to a dedicated RM IHG Project Co-ordinator:

- 2.2.1.1. A Project Co-ordinator is assigned to each site as a single point of contact; this helps build a relationship between the site and RM IHG, reassuring them that they have a named person they can go to with any queries or issues during the order fulfilment process. The Co-ordinator may also liaise with other stakeholders (e.g. technical support providers) where required. The Co-ordinator is responsible for identifying and booking suitable dates for installation activities, both on and off site, and confirming those with all stakeholders.
- 2.2.2. The provisioning process for larger Projects involving multiple sites (20+) may be overseen by an RM IHG Project Manager, with particular provisioning tasks allocated to a dedicated RM IHG Project Co-ordinator:
  - 2.2.2.1. A PRINCE 2 qualified Project Manager will oversee large, multiple site projects where multiple stakeholders are involved. The Project Manager will be responsible for agreeing the scope of the project and developing the plan. The Project Manager will manage the general timeline of activity in accordance with the plan and report project progress to identified stakeholders, and handle project wide issues. Individual site-level tasks and issues will continue to be managed by the Project Co-ordinators who will keep the Project Manager informed.

## **2.3. Provisioning Process**

- 2.3.1. Ordering phase 1
  - 2.3.1.1. Purchase Order raised by Connected Establishment to SWGfL;
  - 2.3.1.2. Purchase Order validated by SWGfL and Provisioning Request raised with RM IHG;
  - 2.3.1.3. Project loaded by RM IHG and dedicated Project Co-ordinator assigned; and
  - 2.3.1.4. Connected Establishment details gathered and collated by SWGfL and/or RM IHG.
- 2.3.2. Ordering phase 2
  - 2.3.2.1. Order submitted by RM IHG to Telco;
  - 2.3.2.2. Order acknowledged and validated by Telco; and
  - 2.3.2.3. Order enters Telco planning cycle.
- 2.3.3. Survey phase

- 2.3.3.1. Desktop survey and/or site survey dates proposed by Telco to RM IHG;
- 2.3.3.2. RM IHG communicate dates to Connected Establishment;
- 2.3.3.3. Desktop survey and/or site survey undertaken by Telco;
- 2.3.3.4. Results of survey communicated to RM IHG by Telco; and
- 2.3.3.5. Results of survey communicated to Connected Establishment by SWGfL/RM IHG.
- 2.3.4. Telecommunications delivery phase
  - 2.3.4.1. Telecoms Circuit estimated delivery date published by Telco to RM IHG;
  - 2.3.4.2. Telecoms Circuit estimated delivery date communicated to Connected Establishment by SWGfL/RM IHG;
  - 2.3.4.3. Telecoms Circuit build and associated works undertaken by Telco;
  - 2.3.4.4. Telecoms Circuit completion date published by Telco to RM IHG;
  - 2.3.4.5. Telecoms Circuit completion date communicated to Connected Establishment by SWGfL/RM IHG; and
  - 2.3.4.6. Telecoms Circuit Fit and Test completed by Telco.
- 2.3.5. Installation phase
  - 2.3.5.1. Telecoms Circuit handed over to SWGfL / RM IHG by Telco;
  - 2.3.5.2. CPE configured by RM IHG;
  - 2.3.5.3. CPE despatched to Connected Establishment by RM IHG; and
  - 2.3.5.4. Installation undertaken.
- 2.3.6. Completion phase
  - 2.3.6.1. Service Operational Testing undertaken by RM IHG and/or Connected Establishment;
  - 2.3.6.2. Service handed over to Connected Establishment; and
  - 2.3.6.3. Project closure.

## **2.4. Provisioning Responsibilities**

- 2.4.1. It is the responsibility of SWGfL to:
  - 2.4.1.1. Set Connected Establishment expectations regarding Service performance and installation based on available information;
  - 2.4.1.2. Receive Purchase Order from Connected Establishment and validate;

- 2.4.1.3. Collect relevant details (e.g. address & install location information) from Connected Establishment and pass on to RM IHG (where it is agreed SWGfL will do this);
  - 2.4.1.4. Support Connected Establishments in obtaining certain infrastructural elements (e.g. PSTN Lines) for certain Services where these are required from SWGfL; and
  - 2.4.1.5. Raise Provisioning Request for relevant Service(s) to RM IHG.
- 2.4.2. It is the responsibility of RM IHG to:
- 2.4.2.1. Assign a Project Co-ordinator to the Project;
  - 2.4.2.2. Collect relevant details (e.g. address & install location information) from Connected Establishment (where it is agreed RM IHG will do this);
  - 2.4.2.3. Place order with Service Provider Partners (e.g. Telco);
  - 2.4.2.4. Manage any surveys required, including communicating dates and results to Connected Establishment;
  - 2.4.2.5. Manage Telecoms Circuit delivery, including communicating estimated delivery date and completion date to Connected Establishment;
  - 2.4.2.6. Manage hand over of Telecoms Circuit;
  - 2.4.2.7. Configure and despatch CPE to site;
  - 2.4.2.8. Arrange and/or undertake any installation activities as per the Setup Services for particular Service being installed;
  - 2.4.2.9. Make any changes to centralised services (e.g. firewall and Core Network) to allow site to join the Service (for new sites), or configure the solution to provide the equivalent service (for existing sites);
  - 2.4.2.10. Agree with Connected Establishment who will undertake Service Operational Testing;
  - 2.4.2.11. Undertake Service Operational Testing (where agreed that RM IHG will undertake);
  - 2.4.2.12. Hand Service over to Connected Establishment;
  - 2.4.2.13. Arrange collection of any redundant equipment from the Connected Establishment; and
  - 2.4.2.14. Close Project.
- 2.4.3. It is the responsibility of the Connected Establishment to:



- 2.4.3.1. Analyse their requirements and reflect them against the SWGfL specification to ensure a good fit;
- 2.4.3.2. Provide Purchase Order to SWGfL;
- 2.4.3.3. Provide contact details for relevant personnel;
- 2.4.3.4. Provide correct details (e.g. address information and location on site) for installation of Service;
- 2.4.3.5. Ensure installation location has suitable Power, Environment and Cooling (see section 3.6), capable of supporting installation of the Service;
- 2.4.3.6. Allow engineers or other staff from SWGfL, RM IHG or Service Provider Partners access to the site as agreed and provide any reasonable assistance required;
- 2.4.3.7. Undertake any installation activities agreed with the Project Co-ordinator and as per the Setup Services for particular Service being installed; and
- 2.4.3.8. Undertake Service Operational Testing (where agreed that Connected Establishment will undertake).

## 2.5. Lead Time

- 2.5.1. The following table shows the typical target lead times for different Circuit types from the point that the order is placed with the Telco.

<b>Connection Type</b>	<b>Target Lead Time (working days)</b>
Fibre	65
Bandwidth Upgrade (fibre)	30
Circuit shift	30
ADSL	10
EoSFB	20
FtC	20

- 2.5.2. The specific lead time for each Project is subject to agreement between the RM IHG Project Co-ordinator and the Connected Establishment, and subject to Telco resource availability.

## 2.6. Contact Details

2.6.1. Below are provided contact details for key teams involved in the Project:

Team	Contact Details
SWGfL Schools Internet Services	<a href="mailto:sis@swgfl.org.uk">sis@swgfl.org.uk</a> 0845 601 3203
RM IHG Project Co-ordination	<a href="mailto:connectivity@rm.com">connectivity@rm.com</a>
RM IHG Service Desk	<a href="mailto:support@swgfl.org.uk">support@swgfl.org.uk</a> 0845 307 7870
RM IHG Change Management	via ESI, or <a href="mailto:change@swgfl.org.uk">change@swgfl.org.uk</a>

## 3. Technical Solution

### 3.1. Solution Design

- 3.1.1. All SWGfL Core Services share a generally common set of configurable attributes by default, and are set up in accordance with the details in this document.
- 3.1.2. The SWGfL network is a large private network designed for high performance, availability and security. Telecommunications circuits can be both 'private' (i.e. deployed between the Connected Establishment premises and an upstream node managed by SWGfL), or 'public' (i.e. deployed between Connected Establishment premises and a Telco's wider network), and in both cases are configured to route traffic privately into the SWGfL Core Network.
- 3.1.3. The Connected Establishment LAN will be hidden behind one or more public IP address when accessing resources on the Internet. The default firewall policy protecting each Connected Establishment will only allow access to/from the LAN to certain services on the Internet. This is a measure taken to protect Connected Establishments from threats, and to minimise the misuse of Connected Establishment resources and reduce the spread of viruses and other malware.
- 3.1.4. No traffic shall enter or leave the SWGfL network without being explicitly permitted by the firewall. No traffic shall route directly between Connected Establishments unless having been explicitly allowed to do so. Internet-based services that are available by default include DNS, FTP, ICMP (ping, traceroute

etc.), IDENT, IMAP4, NTP, POP3, SSH, SMTP and Telnet. Direct web access (HTTP/HTTPS) is not allowed by default but is passed through centralised firewalls and proxy services for safety and security reasons. If Connected Establishments require changes to the configuration, these can be requested prior to deployment through the Modification Process detailed at section 5.2, or post deployment through the Change Control Procedure.

- 3.1.5. Each Core Service is configured to support two LANs (or VLANs) using the IP range provided (as detailed in section 3.3). The Core Service can be reconfigured to support multiple VLANs prior to deployment through the Modification Process detailed at section 5.2, or post deployment through the Change Control Procedure.

## **3.2. Core Network Services**

- 3.2.1. The SWGfL Core Network provides a number of important services, including:
  - 3.2.1.1. Domain Name System (DNS): via the Core Network, Connected Establishments have access to resilient nameservers using industry standard software and supporting IPv4 and IPv6;
  - 3.2.1.2. Filtering: via the Core Network, Connected Establishments have access to cost effective content filtering and content access control technologies;
  - 3.2.1.3. Firewalling: via the Core Network, Connected Establishments are protected by high performance firewalls and intrusion detection systems, managed by experts;
  - 3.2.1.4. Network Address Translation (NAT): via the Core Network, the large private IP address ranges provided to Connected Establishments;
  - 3.2.1.5. Peering and Transit: via the Core Network, Connected Establishments are connected to multiple service providers, and public and private Tier I transit connections that have 99.999% availability;
  - 3.2.1.6. Traffic Prioritisation: within the Core Network, Class Based Weighted Random Early Detection (CB-WRED) is implemented to apply traffic prioritisation to avoid congestion before it occurs by monitoring the packet load within each traffic flow and intelligently prioritising packet transmission rates in order to anticipate and prevent congestion from occurring at key points;

### **3.3. Access to Core Network Configuration Information**

3.3.1. The configuration information for a Connected Establishment can be provided on request from the RM IHG Change Management Team, including:

3.3.1.1. an audit of firewall rules, NAT rules, PAT rules and port details as appropriate; and

3.3.1.2. DNS details, including A, CNAME, and MX records as appropriate.

3.3.2. Where these details are required to support development in association with the Service (e.g. staff handover, or managing changes to internal systems), there are no Charges. Please note however that this information can also be helpful when migrating away from using SWGfL, and SWGfL and RM IHG reserve the right to raise Charges in such circumstances.

Managing SWGfL security services – including firewalls and other systems – is integral to the safety and security of the Service provided to Connected Establishment and users, and as such RM IHG use verified processes and certified engineers to undertake this work and provide the details requested. This will ensure that the most up to date information in relation to standard rules and settings, as well as any that are unique to a Connected Establishment, are provided.

It is the intention of SWGfL not to pass on additional charges raised for the implementation of ‘change’, as:

- It is recognised that every Connected Establishment is different, and will need different configurations – and SWGfL does not want standard security configurations to prevent this; and
- SWGfL strives to ensure the Service is as flexible as possible, and in this sense that cost is not a barrier to getting the most from the service.

However, in order to do this SWGfL needs to maintain a balance between the time and resources spent on active change for the purposes of supporting the requirements of on-going Schools Internet Service users, and those spent providing information in relation to migrating away from SWGfL.

### **3.4. IP Configuration**

3.4.1. SWGfL provides a number of private static IP addresses and a number of public static IP addresses as part of the standard configuration:

- 3.4.1.1. SWGfL provides 4,096 private static IP address to large Connected Establishments and 1,024 private static IP addresses to smaller Connected Establishments from the 10.0.0.0/8 supernet; and
- 3.4.1.2. SWGfL provides 8 public static IP addresses (of which 5 are addressable), supported using static NAT rules on the central firewalls within the SWGfL Core Network.
- 3.4.2. Larger allocations of private or public IP addresses can be requested at no additional charge, subject to reasonable use.
- 3.4.3. SWGfL is allocated:
  - 3.4.3.1. a /17 IPv4 supernet; and
  - 3.4.3.2. eligibility for a /32 IPv6 supernet, to simplify routing and network management. SWGfL will be able to assign and register IPv4 and/or IPv6 address blocks directly to each Connected Establishment in accordance with RFC3177 without deferring to RIPE. This significantly reduces the time and effort involved.

### **3.5. Traffic Management**

- 3.5.1. Quality of Service (QoS) techniques may be employed to provide traffic management. QoS allows differentiated treatment to be applied to traffic, improving the level of service by:
  - 3.5.1.1. ensuring consistent response times;
  - 3.5.1.2. providing reliability for high priority applications at all times, by guaranteeing reserved bandwidth (e.g. such as video conferencing); and
  - 3.5.1.3. reducing periods of congestion by making more efficient use of available bandwidth.
- 3.5.2. Where QoS is employed, at the edge of the network all traffic will be identified by IP Precedence marking, and classified so that a different QoS policy will be applied to each traffic class, at each hop through the network. Any packets with existing QoS markings entering the SWGfL CPE will be rewritten with the SWGfL QoS classification policy.
- 3.5.3. After classification has taken place, queue management will be carried out on the network interfaces so that, at times of congestion, each traffic flow will only consume a defined amount of bandwidth. The exact amount of

bandwidth allocated to each class may be varied according to requirements and applications used.

3.5.4. Six QoS classifications can be supported which are as described below:

<b>Class</b>	<b>Queue Management</b>	<b>Treatment</b>	<b>Suggested Applications</b>
<b>Real Time</b>	LLQ (Low Latency Queuing)	Flows of traffic are 'de-queued' and given strict priority over all remaining classes	Provides low latency and low jitter guarantees, suitable for voice and video applications
<b>Critical 1; Critical 2; Critical 3</b>	CBWFQ (Class Based Weighted Fair Queuing)	A guaranteed minimum amount of bandwidth is reserved for traffic within each classification. Flows of traffic within each class are queued and serviced evenly	Provides guaranteed reserved bandwidth, suitable for essential data and applications, for example School MIS data
<b>Best Effort</b>	WFQ (Weighted Fair Queuing)	Bandwidth is not reserved for traffic in this classification, but flows of traffic are queued and serviced evenly	Provides consistent response times without consuming additional bandwidth, suitable for default traffic
<b>Scavenger</b>	None	No bandwidth is reserved and no queuing is applied. Traffic is only sent when capacity is available	Suitable for ensuring that low priority traffic does not consume any bandwidth at times of congestion

### 3.6. Existing Connected Establishments

3.6.1. Where a Connected Establishment has an existing SWGfL Core Service and is engaged in a Project to increase performance or change connectivity

technology, by default we will configure the solution to provide the equivalent service as part of the Project.

- 3.6.2. To ensure continuity, there will be a period of overlap where the new Circuit(s) is deployed alongside the existing Circuit(s). Whilst this means that, during the overlap period, Charges for both Circuits apply, SWGfL and RM IHG will work to keep the period to a minimum, and the period is important to allow for any issues with the deployment of the new Circuit to be absorbed without putting connectivity at risk, and the cessation of the existing Circuit to be elegantly managed.

### **3.7. Customer Premises Equipment (CPE)**

- 3.7.1. SWGfL Core Services are deployed using CPE from leading manufacturers following rigorous testing to ensure performance and reliability meet requirements.
- 3.7.2. CPE is pre-configured by RM IHG engineers prior to despatch to Connected Establishment premises according to the agreed Connected Establishment requirements.
- 3.7.3. CPE is managed by RM IHG, and no access to CPE configuration is provided to Connected Establishments by default. This allows SWGfL to uphold assurances provided to Connected Establishments in respect of performance, reliability and security.
- 3.7.4. Local services on CPE that are enabled by default can be provided on request from the RM IHG Change Management Team. As part of the security approach, all other unused features, services and interfaces on CPE are disabled or secured by default, including:
  - 3.7.4.1. Content filtering and content access control;
  - 3.7.4.2. Domain Name System (DNS);
  - 3.7.4.3. Dynamic Host Configuration Protocol (DHCP);
  - 3.7.4.4. Firewalling and intrusion detection systems;
  - 3.7.4.5. Identity management;
  - 3.7.4.6. Simple Network Management Protocol (SNMP);
  - 3.7.4.7. Voice gateways and Unified Communications services; and
  - 3.7.4.8. Wireless LAN services,as the necessary equivalent services are provisioned within and deployed from the SWGfL Core Network (or within Connected Establishment ICT

provision), allowing CPE resources to be focussed on achieving maximum routing performance.

- 3.7.5. If Connected Establishments require changes to the configuration, these can be requested through the Change Control Procedure.

### **3.8. Power, Environment and Cooling**

- 3.8.1. CPE requires appropriate power, environmental and cooling provision to be in place in order to operate effectively and provide reliable service.
- 3.8.2. It is the responsibility of the Connected Establishment to provide appropriate space, power, environmental and cooling provision.
- 3.8.3. Typically, CPE is despatched with cabling to support (specific requirements are confirmed prior to installation of specific Circuits):
  - 3.8.3.1. Connection to the Connected Establishment LAN within two metres;
  - 3.8.3.2. Connection to a standard 240 volt power outlet within two metres;
  - and
  - 3.8.3.3. Connection to a PSTN Line (where applicable) within two metres.
- 3.8.4. Connected Establishments may substitute the supplied cables for alternative cables or make use of existing cabling infrastructure. However, SWGfL is unable to provide assurances in respect of the Service should the supplied cables not be used.
- 3.8.5. Uninterruptable Power Supplies (UPS) are not provided by default, as whilst a UPS may be able to continue to supply power to CPE during a power failure, it is likely the client devices within the Connected Establishment would not have power. Connected Establishments that experience frequent power failures, or that have concerns about the reliability of power supplied, are encouraged to consider provision of UPS.
- 3.8.6. Surge protected extension leads or other power interfaces are not provided by default, as many Connected Establishments use Power Distribution Units (PDUs) within rack cabinets to connect active equipment. Connected Establishments that have concerns about the reliability of power supplied are encouraged to consider provision of surge protected PDUs.
- 3.8.7. Some CPE provided by SWGfL include rack mounting hardware, and others have optional rack mounting hardware available (though Charges may apply).



### 3.9. PSTN Lines

- 3.9.1. Some SWGfL solutions require a phone line, or 'PSTN Line' to operate. A PSTN Line is, put simply, a standard BT analogue telephone line. We refer to an existing or newly installed analogue telephone line as a 'PSTN Line', and the phone number for this line as the 'PSTN Number'.
- 3.9.2. All ADSL and FttC solutions require a PSTN Line. This can be an existing line, providing it's suitable, or it could be a new line that'll need to be installed in order for the ADSL or FttC solution to run over it.
- 3.9.3. SWGfL can assist Connected Establishments in establishing whether or not a new PSTN Line is needed. In the event that it is, SWGfL can manage the installation of this (additional Charges apply), or Connected Establishments can do so themselves.
- 3.9.4. To establish whether a new PSTN Line is required, guidance can be found here. The table below provides a summary of this:

#	Requirement
1	The PSTN Line has a Master Socket that will be used for connecting the SWGfL solution, NOT an extension
2	It is a PSTN Line (standard BT analogue line), NOT an ISDN line (digital)
3	The PSTN Line is in the correct location, or the Connected Establishment is going to make arrangements for it to be moved to the correct location or for a short extension cable to be used
4	Any other PSTN Lines which may also be available have been checked, in case the one that's been identified turns out not to be usable

- 3.9.5. Please note that if an existing PSTN Line is identified as available to use for a SWGfL Service and any issues with the PSTN Line arise, SWGfL or RM IHG will liaise with the Connected Establishment to seek a resolution. This may involve installing a new PSTN Line, or having the existing PSTN Line moved, and this could delay the order process and incur additional Charges.
- 3.9.6. SWGfL don't actually provide the PSTN Lines, but do work with a Service Provider Partner (e.g. TalkTalk Business) who instruct 'Openreach' (the wires part of BT) to install the PSTN Line(s). Following receipt of a Purchase Order, SWGfL order the PSTN Line(s) through the Service Provider Partner and they contact the BT planning team.

- 3.9.7. BT will allocate an installation slot when they'll come to site to install the new line. This may fall within the working day, so Connected Establishments are required to ensure that senior staff are aware and are able to relocate activities, if required, to enable the engineer to complete the installation in line with any health and safety regulations.
- 3.9.8. The BT engineer will need to be shown where to install the PSTN Line (according to the agreed location), and must not install it anywhere else (as it needs to be within proximity of the power source and LAN).
- 3.9.9. Missed appointments carry a charge from BT, so it's also important someone is there at the time of the installation slot who knows where to take the engineer.

## **4. Installation**

### **4.1. Installation Process**

- 4.1.1. Following completion of the delivery of any Telecommunications services (e.g. Circuits) required as part of the Project, the installation phase commences. This phase can differ based on the specific Service requested by the Connected Establishment.
- 4.1.2. Where the Service ordered by the Connected Establishment includes RM IHG On Site Installation, the installation phase is as follows:
  - 4.1.2.1. RM IHG Project Co-ordinator contacts Connected Establishment to agree installation appointment (including date & time);
  - 4.1.2.2. RM IHG Project Co-ordinator books an RM Field Engineer to attend site to complete the local installation tasks;
  - 4.1.2.3. RM IHG Project Co-ordinator books an RM NOC (Network Operations Centre) Engineer to complete the remote installation tasks;
  - 4.1.2.4. On the scheduled installation date the RM Field Engineer arrives at the site and contacts the nominated representative;
  - 4.1.2.5. RM Field Engineer collects any CPE from the nominated representative;
  - 4.1.2.6. RM Field Engineer contacts the RM NOC Engineer to initiate the installation process;

- 4.1.2.7. RM Field Engineer disconnects and removes the old CPE and installs the new CPE;
- 4.1.2.8. RM NOC Engineer reconfigures the RM network to activate the new CPE;
- 4.1.2.9. The engineers jointly verify the Service appears to function correctly;
- 4.1.2.10. RM Field Engineer requests the nominated representative verifies the Service is functioning correctly and completes Service Operational Testing;
- 4.1.2.11. RM Field Engineer packs up the old CPE and leaves the package at the Connected Establishment for collection by an RM courier; and
- 4.1.2.12. Installation completed.
- 4.1.3. In some cases Connected Establishments may opt to perform the local installation tasks themselves. This should be agreed with the RM Project Co-ordinator at the time the request to schedule and installation appointment is made.
- 4.1.4. Where the Service ordered by the Connected Establishment does not include RM IHG On Site Installation but the Connected Establishment elects to commission local installation services from RM IHG, the installation phase is similar to the flow in section 4.1.2.
- 4.1.5. Where the Service ordered by the Connected Establishment does not include RM IHG On Site Installation, the installation phase is as follows:
  - 4.1.5.1. RM IHG Project Co-ordinator contacts Connected Establishment to agree installation appointment (including date & time);
  - 4.1.5.2. RM IHG Project Co-ordinator books an RM NOC (Network Operations Centre) Engineer to complete the remote installation tasks;
  - 4.1.5.3. On the scheduled installation date the Connected Establishment Engineer locates the CPE;
  - 4.1.5.4. Connected Establishment Engineer contacts the RM NOC Engineer to initiate the installation process;
  - 4.1.5.5. Connected Establishment Engineer disconnects and removes the old CPE and installs the new CPE;

- 4.1.5.6. RM NOC Engineer reconfigures the RM network to activate the new CPE;
  - 4.1.5.7. The engineers jointly verify the Service appears to function correctly;
  - 4.1.5.8. Connected Establishment Engineer verifies the Service is functioning correctly and completes Service Operational Testing;
  - 4.1.5.9. Connected Establishment Engineer packs up the old CPE and leaves the package for collection by an RM courier; and
  - 4.1.5.10. Installation completed.
- 4.1.6. For solutions that use copper-based circuits (e.g. ADSL, FttC and EFM), the actual stable line speed supportable will be determined during the first ten days of use. This period is used to determine the best possible speed (maximum stable rate) for the solution. The CPE will connect with equipment at the serving exchange and attempt to establish the optimum rate. During the ten day period Connected Establishments may experience losses of connection or variations in performance, however this will stabilise towards the end of the period.

## **4.2. Installation Roll-Back**

- 4.2.1. On occasion it is possible that issues can be experienced during the installation phase and the resulting Service does not meet the requirements of the Connected Establishment.
- 4.2.2. Whilst it is sometimes possible to roll-back to the previous Service, this is not a standard aspect of the provisioning process.

# **5. Bespoke Requirements**

## **5.1. Requirements Analysis**

- 5.1.1. In some circumstances there may be specific Connected Establishment requirements that are not fully met by the default configuration or provisioning services of the SWGfL Service.
- 5.1.2. In many cases it is possible to modify aspects of the Service to meet these, though analysis is necessary to validate the nature of modification required and the resultant impact on the Service, as well as any change to the Charges.

- 5.1.3. It is the responsibility of the Connected Establishment to analyse their requirements and reflect these against the descriptions and specifications of the Service provided by SWGfL.
- 5.1.4. In any case where a Connected Establishment has an identified need for modification, the process below should be used.

## **5.2. Modification Process**

- 5.2.1. All modifications to the default configuration as set out in this document should be identified in writing to the SWGfL Schools Internet Service Team using the details in section 0.
- 5.2.2. Modification requests received prior to the completion of a provisioning Project and with reasonable time given for SWGfL and/or RM IHG to assess and respond to the request will be managed as part of the Project. Modification requests received post completion, or without sufficient time for SWGfL and/or RM IHG to assess the request will be managed via the Change Control Procedure.

# **6. Commercial Aspects and Terms**

## **6.1. Procurement**

- 6.1.1. SWGfL is a not-for-profit charitable trust company wholly owned by the fifteen local authorities in the south west of England and was established in November 2000 as one of ten Regional Broadband Consortia (RBCs) in the UK.
- 6.1.2. SWGfL is a contracting authority as defined in the Regulations and is able to procure goods and services on behalf of other contracting authorities (which includes schools, councils and many other public bodies).
- 6.1.3. Public sector procurement represents a significant factor when reviewing suppliers and routes to purchasing services that public sector bodies including schools must take account of. SWGfL has undertaken a full EU procurement on behalf of schools and local authorities, enabling them to purchase a Service from SWGfL without the need to engage complex, costly and time consuming competitive processes, and with confidence that the Service is best value and that the procurement is fully compliant.

## **6.2. Charges**

- 6.2.1. SWGfL Charges for the Service are broken down in the interest of ensuring Connected Establishments have transparency and sufficient information to satisfy requirements. This breakdown can include:
- 6.2.1.1. Telecoms – Access Charges, which relate to the initial provision of, or the ongoing supply and maintenance of, physical or virtual Telecommunications circuits (such as fibre bearers or ADSL services) that connect a Connected Establishment to an upstream network node. All Telecoms Charges are passed on by SWGfL and RM IHG at 0% margin;
  - 6.2.1.2. Telecoms – Backhaul Charges, which relate to the initial provision of, or the ongoing supply and maintenance of, physical or virtual Telecommunications circuits (such as fibre bearers or ADSL services) that connect upstream network nodes to the SWGfL Core Network and which a percentage of which are apportioned to Connected Establishments. All Telecoms Charges are passed on by SWGfL and RM IHG at 0% margin;
  - 6.2.1.3. CPE Charges, which relate to the initial provision of, or the ongoing supply and maintenance of, equipment (e.g. a router) located at the Connected Establishment;
  - 6.2.1.4. Transit Charges, which relate to the initial provision of, or the ongoing supply of, network interconnections and IP transit between the SWGfL Core Network and other major networks and service providers (e.g. the Internet); and
  - 6.2.1.5. Service Charges, which relate to the initial provision of, or the ongoing management of, the Service as a whole and the integrated service elements within (including the Service Desk, Change Control Procedure, safety and security features and services, NOC, and more).
- 6.2.2. Setup Charges are typically one-off charges to cover the initial establishment, provisioning or purchase of an item, such as a router.
- 6.2.3. Annual Charges are recurring charges, expressed for the period of a year, raised during the Term to cover the ongoing provision, management and maintenance of the Service.

### **6.3. Invoices and Credits**

- 6.3.1. SWGfL invoices for the Service annually in advance, and can support financial year (April to March) or academic year (September to August) cycles to suit.
- 6.3.2. SWGfL typically does not raise invoices in relation to Project works until the Project is completed.
- 6.3.3. In cases where a Connected Establishment has an existing Service and the focus of the Project is to upgrade or change that Service, following completion:
  - 6.3.3.1. SWGfL will raise any associated Setup Charges and pro-rata Annual Recurring Charges for the new Service in line with the adopted invoicing cycle of the Connected Establishment; and
  - 6.3.3.2. SWGfL will raise any associated credits for pre-paid Annual Charges for the existing Service in line with the adopted invoicing cycle of the Connected Establishment.

### **6.4. General Terms**

- 6.4.1. The provision of a SWGfL Service is offered under the Terms and Conditions of the South West Grid for Learning Trust (SWGfL) which can be found at [www.swgfl.org.uk/terms](http://www.swgfl.org.uk/terms).
- 6.4.2. The Service is underpinned by the Agreement relating to the provision of the SWGfL Schools Internet Service of 18th June 2010 between South West Grid for Learning Trust Limited and RM Education plc. In addition the following terms and conditions apply:
  - 6.4.2.1. The Service is subject to contract with Telecommunications Companies (Telcos) and a minimum term as defined on an individual basis, commencing at the point the Service is installed and/or the Project completed;
  - 6.4.2.2. Telco Charges and availability are subject to site survey; Setup Charges may increase to reflect any Excess Construction Charges (ECCs) identified by the Telco following survey; an administration fee may be charged for any Service not delivered as a result of ECCs being identified; and the overall Charges may vary as a result of any Service not being delivered due to ECCs;
  - 6.4.2.3. The Service is subject to any variations in telecommunications Charges beyond the control of SWGfL or RM (for example cost

increases due to industry regulation, increased utility charges etc.)

Any such increases will be passed through at cost;

- 6.4.2.4. Any hardware Charges are tied to the US dollar exchange rate. If variation in this exchange rate impacts the cost of hardware procurement by more than 10% then the Charges are subject to change;
- 6.4.2.5. It is the responsibility of the Connected Establishment to provide appropriate space, power and environmental conditions for any new hardware supplied as part of the Service;
- 6.4.2.6. Any future increases in bandwidth may incur additional Setup and recurring Annual Charges;
- 6.4.2.7. Implementation lead time is subject to agreement and Telco resource availability;
- 6.4.2.8. The boundary of the SWGfL Core Service will be defined as the LAN port on the CPE at each Connected Establishment at which the SWGfL Service is provided; and
- 6.4.2.9. All Charges quoted exclude VAT and payment terms are twenty one (21) days from date of invoice.