



DIGITAL CLASSROOMS

Configuring with eduroam

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The Future is Digital

The traditional conservative approach to implementing digital solutions across the campus has to change. If students are going to benefit from technology-rich facilities that move learning, employability skills and social interactions forward, then the seamless integration of both Digital Classrooms and self-supported study areas on to the eduroam network is essential so that the use of students' own BYOD equipment is supported.

Winning Hearts and Minds

According to Jisc, there are no technical, security or bandwidth reasons why Digital Classrooms with Kramer VIA technology cannot be integrated on to

the eduroam wireless network. Such integration not only enriches the student experience, but the collaboration opportunities supported by Kramer VIA have the potential to raise the levels of collaborative learning and accelerate digital capabilities across teaching, learning and research.

Using Digital Classrooms on eduroam provides a consistent technology experience in learning and teaching spaces that enhances the student experience, and promises to make a crucial difference to student learning outcomes.

Why eduroam?

Staff and students on your campus, together with visitors from participating eduroam institutions, can all use eduroam to connect to the Digital Classroom.

KEY POINTS

- **SECURITY** - eduroam requires all users to be authenticated before they can gain access to the wireless Digital Classroom network.
 - **BYOD** - Kramer VIA supports all the major Platforms; Windows, Mac, iOS, Android, and Windows Phone.
 - **NETWORK TRAFFIC** - Kramer VIA does not generate large bandwidth usage, and the VLAN configuration restricts needless cross-network traffic.
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BYOD

Users can connect their device of choice without the need for web-page registration or other time-consuming and less secure account setup procedures.

Security

Each eduroam user complies to a common standard that protects security of data and user credentials. Every authentication is logged creating a clear audit trail that helps identify any breaches of network use policy.

Only authenticated eduroam users can connect to the screens in the Digital Classroom. As they connect, a 4-digit code appears on screen, which has to be entered into the VIA software app in order to complete the connection.

Kramer VIA is used by banks and the military, both of whom have satisfied themselves of network and data security.

Standards

eduroam provides internet access with guaranteed support for a range of commonly used applications, therefore the firewall on the eduroam network must not restrict ports and protocols that are needed for these standard applications (email, VPN, etc.)

Network Resilience

The Kramer VIA technology connects to Gigabit Ethernet ports in the network switch and can cope with a large number (>250) of connected users. The potential weak spot is the wireless infrastructure in the room - wireless access points that students connect through.

Digital Classrooms require modern 802.11ac wireless access points, as these are the latest wifi standard for high density coverage; i.e. they allow large numbers of students to connect with great wireless network speeds.

Using the Digital Classroom

Using Kramer VIA, at each of the six Synergy tables teams of students can simultaneously connect their wireless devices to the display. Visual and audio content from either a single device can be shown, or images from 2, 3 or 4 devices can be compared and contrasted together. A document from any device can be worked on together by any number of students using their own devices, and the finished file instantly shared with every team member. This cocollaboration of information drives full-participation from everyone being mentally engaged together.

Configuring Kramer VIA Technology

In a similar way to supporting standard applications, eduroam can be configured to provide access to the Kramer VIA technology. Kramer VIA does not create its own wireless network, but instead requires a wired connection from eduroam. Typically the Kramer VIA technology for a Digital Classroom is grouped into a single VLAN (a mini network within a network) and specific ports on the eduroam network are opened so that information from a student's device can communicate with VIA. These ports control the content needed to stream video, share files and work simultaneously on a single document.

The isolation of a Digital Classroom on a VLAN stops data broadcasting across the whole network; in fact, the Kramer VIA technology - even with video streaming - does not consume large amounts of network bandwidth.



Connecting to and Controlling the Digital Classroom is very intuitive



Network Support

Within the Digital Classroom, all the Kramer VIA technology and other technical equipment are connected into a single network switch. The host institution should deploy one of their standard network switches so that it is known to staff and can be controlled remotely. Should the Kramer technology need updating with new software, this can be achieved from a central location.

Each Kramer VIA and team display together with any other networking equipment needs to be allocated a static IP address. Equipment in the Digital Classroom is controlled by sending codes to their IP addresses.

Visual Flow

The display signal from each Kramer VIA feeds into a matrix switch. Each Synergy table has its own Kramer VIA Connect Pro, the content from which is shown by default on the display for that table. Using a simple touch-screen tablet, the tutor can instead send information from the Gemini Lectern (PC, Laptop, Visualiser, etc.) to each table, or indeed the visual information from those connected wirelessly to an individual Synergy table, to all tables.

Kramer K-Touch Room Control

The Digital Classroom uses a cloud-based control system called K-Touch to control the information flow. The tablet with K-Touch is also connected to eduroam. The distribution of visual information and the accompanying audio is achieved with just one or two 'clicks', and being wireless the tablet can be controlled anywhere in the room.

The Generation-Z Experience

Connected to eduroam for the first time at UWE as part of a Jisc-supported UK Roadshow, the Digital Classroom's importance goes beyond just the digital experience. Such learning spaces are now integral to a wide range of strategic aims; student recruitment and retention, space utilisation, academic development strategies, and as a key element in the Teaching Excellence Framework.



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