Sent to all S4-S5-S6 parents

BYOD Technical recommendations for devices:

At ES Karlsruhe, in September 2020, all S5, S6 and S7 students must bring a laptop or a tablet computer to school for educational purposes.

Students will be given a personal login to the school Wi-Fi for any educational use. The School will provide students access to the Office 365 services.

You are completely free to choose the device, but it is advisable to choose a laptop or a tablet with the following specifications, based on the *Official guidelines for choosing a mobile device* (see Annex p.3-5):

	Feature	Recommendation for mobile device
D	screen size	**SHOULD** be greater than 9 but to a maximum of 14 inches
	resolution	**SHOULD** be min 1080p
W	weight	**SHOULD NOT** exceed 1.2 kg excluding accessories
C	connectivity	**MUST** have Wi-Fi, Bluetooth (minimum 3.0) **MAY** also have USB-Connection **MAY** have a VGA-connection
	screen cast	**SHOULD** be able to wirelessly connect to a beamer or screen.
B	battery life	**SHOULD** offer sufficient battery life for one school day (i.e. 8 hours). **MAY** charged over USB-C - connection
M	storage	Available memory **SHOULD** be at least 32 GB **(better 64 GB)** and **SHOULD** be a Flash Memory (SSD, EMMC…) **MAY** be equipped with an external memory.
	RAM	Tablets (Android, IOS) **SHOULD** have at least 2 GB of RAM. Laptops or convertibles (Windows, Linux, MAC OS, Chrome OS) **MUST** have at least 4GB (better 8GB)
V	multimedia	**MUST** have at least one camera, an audio-output-jack and a microphone **SHOULD** have an audio-speaker and an microphone-jack
I	input	**SHOULD** have a keyboard (virtual or physical) [Devices with virtual keyboard SHOULD be able to be connected with a physical keyboard if needed.] **SHOULD** have a pen **MAY** have a touchscreen
A	Applications	**MUST** have Applications or Programs to get the functionality of: • **Office 365 – WORD** • **Office 365 – EXCEL** • **Office 365 – PowerPoint** • **Office 365 – TEAMS** • **Office 365 – ONENOTE** • **Office 365 – ONEDRIVE** **MUST** have a WEBBROWSER which **SHOULD** work with Office 365 **MUST** have an Email-Client to receive and send Emails from Office 365 School account **SHOULD** have Application or Program to manage Picture, Audio and Video **MAY** have Application or Program to take notes with pen or finger **MAY** have Application or Program to scan a document, to read a qrcode
S	Security	**MUST** have a LOGIN-Passphrase or KEYCODE to lock the system (after a few minutes of inactivity) **SHOULD** be able to protect personal data in open networks (i.g. Protection against Filesharing, access to the device by network) **MAY** have a security protection against Malware (Trojan, Virus, etc.)
O	options	**SHOULD** have a case to be secured against physical damage **MAY** have a screen protection **MAY** have a been labelled by studentname (Personally)

These technical recommendations will also be available on the booklists that will be published on the School's website.

Annex

Official Guidelines for choosing a mobile device related to the BYOD Project

Based on the "*Guidelines for the pedagogical use of mobile devices in the European Schools*" (*Ref. 2020-01-D-14-en-2*)

The choice of mobile devices is an essential point in the digital equipment of institutions and schools. Indeed, mobile equipment often comes with an ecosystem in which it is integrated: hardware management tool, software management tool, application acquisition process, information security and personal data protection. The hardware support and the different stages of preparation of a mobile device are also important points in the choice of equipment and associated services.

These guidelines are intended for stakeholders involved in the acquisition of mobile devices or mobile classrooms (schools) or BYOD terminals (responsible for students or others) who will find recommendations to guide them in their choice. The requirement levels in the recommendations are expressed using specific words, based on the RFC 2119[1] terminology:
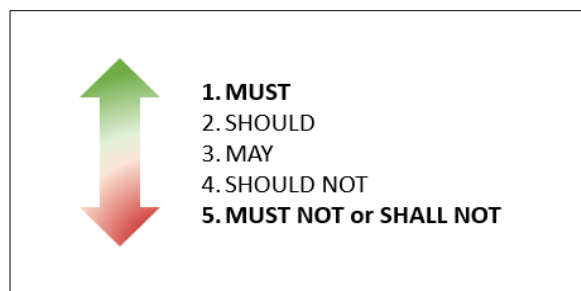
Table 1*: Required level of recommendations*

1. MUST
2. SHOULD
3. MAY
4. SHOULD NOT
5. MUST NOT or SHALL NOT

Table 1: *Signification of the level of recommendation*

MUST[2]	the element is an **absolute requirement** of the specification
SHOULD	there may be valid reasons in particular circumstances for ignoring a particular element, but all **implications must be understood** and **carefully weighed** before choosing a different path
MAY[3]	the element is **truly optional**
SHOULD NOT[4]	there may be valid reasons in particular circumstances where a particular behaviour is acceptable or even useful, but **all implications should be understood**, **and the case carefully weighed** before implementing any behaviour described with this notation
MUST NOT[5]	the element is an **absolute prohibition** of the specification

[1] https://www.ietf.org/rfc/rfc2119.txt. The Internet Engineering Task Force (IETF) is an open standards organization, which develops and promotes voluntary Internet standards; Requests for comments (RFCs) are a numbered series of documents published by the IETF and describing the technical aspects and specifications of the Internet, or of different computer hardware.

[2] Other terms: "REQUIRED" or "SHALL".
[3] Or the adjectives "OPTIONAL" or "RECOMMENDED".
[4] Or the phrase "NOT RECOMMENDED".
[5] Or "SHALL NOT".

1. Hardware Features

Mobile devices must comply with a set of characteristics and recommendations to ensure proper use in schools:

Feature	Recommendation for mobile device	Reason
screen size	**SHOULD** be greater than 9 but to a maximum of 14 inches	A size smaller than 9 inches penalizes the possibilities of reading and producing content. A screen size bigger than 14 inches might be too big for the schoolbag and the table during lessons
resolution	**SHOULD** be min 1080p	To display documents, graphs, tables and text properly and to work on the device the resolution should be 1080p (FHD) or more. 720p (HD) is possible, but for proper work in Office it is too less.
weight	**SHOULD NOT** exceed 1.2 kg excluding accessories	For the same reasons as above.
connectivity	**MUST** have Wi-Fi, Bluetooth (minimum 3.0)	Students and teachers need to connect to the internet via the school's network and to wireless accessories (headphones, mouse…)
screen cast	**SHOULD** be able to wirelessly connect to a beamer or screen.	This encourages the sharing of students' work in the classroom and collaborative work.
battery life	**SHOULD** offer sufficient battery life for one school day.	The classrooms are not equipped to load all the students' mobile equipment. Note that during a normal school day, the device is not necessarily permanently switched on. In case of a smaller device (< 10 inches) 30 Wh and in case of a bigger device 50 Wh are good.
storage	Available memory **SHOULD** be at least 32 GB and **SHOULD** be a Flash Memory (SSD, EMMC…) **MAY** be equipped with an external memory.	The mobile device also **MAY** be equipped with an external memory such as a micro SD card to expand its memory capacity. A spinning hard drive (HDD) is not so durable in a mobile device.
RAM	Tablets (Android, IOS) **SHOULD** have at least 2 GB of RAM. Laptops or convertibles (Windows, Linux, MAC OS, Chrome OS) **MUST** have at least 4GB	The device gets very slow when the RAM is fully used by the OS and the applications. For proper work enough RAM is very important.
camera	**SHOULD** have at least one camera	In order to make photos of documents or students' work and make small videos for learning reasons. The quality of the camera **SHOULD** be adapted to the use[6].

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[6] For a videoconference, the use of lip-reading by the hearing-impaired depends on the quality of the image captured (as well as its transport over the network and its restitution according to the quality of the software and the screen).

2. Accessories

Feature	Recommendation for mobile device	Reason
protection	Protective cover or shell **SHOULD** be associated with the MD (if it is not reinforced to limit damage).	To sustain the lifetime, the device **SHOULD** be protected in some way to avoid damages on screen and device. The protective cover **SHOULD** allow the mobile device to be placed in an upright or tilted position, not just flat, making it easier to view the media.
keyboard	A physical keyboard **SHOULD** be associated with the MD	Tablets all have virtual keyboards, which are not suitable for mass content production, especially in Secondary. Thus, a physical keyboard compatible with the mobile equipment **SHOULD** be associated with the mobile equipment. However, the virtual keyboard has the advantage of being able to adapt to the context of use of the device (e.g. various languages) and offers a solution to the problem of specific characters.
accessories	**MAY** be associated with the mobile device, but **MUST** be adapted so as not to interfere with its use	Mobile equipment must be able to respond to many situations and allow a variety of uses. Accessories **MAY** be associated with the mobile device (e.g. pointing pen, fine-tip stylus for writing with the hand, technical probes, etc.), depending on the educational uses expected in the school or establishment, or special needs (e.g. disability compensation). Several subjects or situations (modern languages, music education, school outings, podcasting, certain cases of visual impairment) require the use of headphones or earphones. The accessories selected to complement the mobile equipment **MUST** be adapted so as not to degrade its use. For example, make sure that the protective cover does not obstruct the camera, microphone, speakers, plugs, buttons...