**Annex 1 Audio guide specifications**

Ergonomics:

* + Hands-free. Headphone solution with integrated audio guide hardware. The visitor must be able to move around the exhibition and experience it, usually without using their hands to operate it.
	+ Adjustable to fit heads of different shapes and sizes.
	+ Open – users must also be able to hear what’s going on around them so they can interact with their surroundings.
	+ Pause and play. The visitor must be able to mute and resume the audio, e.g. via a pause button or automatically when they put the headphones on and take them off.
	+ Sound level. The visitor must be able to adjust the volume. At least within a range we set in CMS (to prevent the visitor from turning it down too low or up so high that it is harmful or disruptive).
	+ Little to no noise from the mechanical parts of the headphones, such as squeaking or rattling.
	+ Must be able to withstand being dropped on the floor and put on and taken off thousands of times.
	+ Pads and other soft parts must be cleanable and replaceable.

Sound quality:

* + Stereo.
	+ Binaural or live mixing in relation to compass/gyro, so it seems as if the sound is coming from a specific direction, e.g. a screen with a movie, a stage, a set, a puppet.
	+ Faithful reproduction of speech, music, effects and soundscapes. Frequencies from approx. 30 Hz-20 kHz, linear reproduction.
	+ Low noise level. The visitor must not be able to hear noise from the audio guide.

Handling:

* + Charging stands in a rack, shelf unit or cabinet.
	+ Space for 250 devicesand handling in 12m2 or less**.**
	+ Integrated plug for charging that fits the charging stand.
	+ Must be able to withstand being plugged in and unplugged from the stand numerous times (more than 1,500).
	+ No cable from charger to audio guide. (There may be a plug that fits USB, but this is not for normal use).
	+ Must be able to be handled and issued by a single host in less than 1 minute per device.
	+ Possibility for hosts to select the language when handing it over to the visitor.
	+ Long battery life. 10+ hours.

Playing of content:

* + Must be able to play and mix at least two audio sources simultaneously, e.g. a separate narrator voice and foreground and separate background sound/soundscape.
	+ The two audio sources must also be able to play independently, so for example, the narrator’s voice continues even if the set disappears or vice versa.
	+ Must be able to fade sound sources in and out so there is a smooth transition between them.
	+ Must be able to play content synchronously with video or other content in the exhibition.
	+ Option: Live audio, e.g. to guide.

Content triggering:

* + Location managed. Different files play depending on where we are in the exhibition. This can be via beacons/trigger points or similar in the exhibition (fixed points that trigger certain content) or via uwb/gps/trigonometric positioning, where a position within a certain area triggers the sound.
	+ Sound must be able to start automatically.
	+ The system must be able to handle 100-150 audio guides in use at the same time, in different locations in the same exhibition in an area of less than 500 m2.

Content management/CMS:

* + Access to change, develop and update content on a CMS.
	+ Possibility to determine which actions and events start, stop and pause the playing of the content.
	+ Content can either be streamed to the devices or stored locally on them.

Test:

* + We must be able to obtain a minimum of 20 audio guides by 30 September 2023, including charging stands, beacons/trigger points or similar, so we can test the system thoroughly while we develop content for the audio guide and build mock-ups of scenography.

Production:

* + Advice on content production so we can create content that works well on the devices, e.g. utilising binaural audio/live mixing.

The quote includes:

Audio guides – 180 pcs.

Charging stands for audio guides.

Cabinets or drawers for charging stands.

CMS to program and add content to the devices (annual cost).

CMS for monitoring the devices (annual cost).

Trigger points or similar to trigger autoplay on device. 12 pcs.

Service agreement – devices can be replaced and repaired within a short time frame (annual cost once the warranty ends).

Price for purchase of additional devices if required.

And additional services/item necessary to have a complete functioning audio guide system.