

German utility model no. DE202020104405U1

## The Last Smartphone or the Last App of a Smartphone

### Description

There are many types of smartphones (a better term than mobile, mobile phone, cell phone, or cellular phone), which are constantly being developed but are now making only small advances. The production of rapidly changing models requires enormous amounts of energy and raw materials, which harm the environment.

Currently, existing solutions perform their tasks very well, but they are not designed for sustainable use and are therefore expensive and harmful to the climate overall. In areas with good wireless access to the internet, new developments are possible. Nowadays, the majority of internet traffic is already caused by streaming videos (significantly more than surfing, video conferencing, shopping, etc.). This already demonstrates the high performance of the current (wireless) network infrastructure and makes the invention possible.

A comprehensive and sustainable solution is desired, and the invention of the "last smartphone" (or "the last smartphone," also known as the online smartphone), as mentioned in claim 1, which could be purchased inexpensively, or a corresponding (last) app (program, application, software, computer program) on one's own smartphone, meets these requirements.

### An Exemplary Embodiment:

Given the ever-improving (wireless) network infrastructure (via WLAN, hotspots, 4G, LTE, 5G, Bluetooth, etc.), an online smartphone is possible and makes sense. The prerequisite is good wireless internet access.

For the hardware and software solution of the "last smartphone" or the "last app," among other things, end-to-end encryption (E2EE) of data and compressed audio/video/sensor data transmission is sensible (claim 2). Furthermore, only changes to the display should be transmitted (claim 3), as is known, for example, from remote maintenance, video

conferencing, remote desktops, etc. Pure text content could be transmitted particularly quickly. Temporary intermediate storage of photos, videos, sound, etc., on the device may sometimes be useful (claim 4). The goal is to immediately transmit the data to be processed to the servers (upload) and then directly receive the processed data back (download).

The online smartphone or one's own smartphone with the corresponding app (thus a kind of terminal as a user-end device, claim 5) sends the data, for example, to a central server (as software and/or hardware host computer), on which programs of all kinds (e.g., utilities, network services, games, access to a file system or database) are executed for the client (claim 6). Thus, the online smartphone mainly serves (only) for the input and output of data (claim 7). Many existing operating systems can run or be adapted on the servers or server farms; however, a specially optimized operating system for the online smartphone could also run (claim 8). A specially optimized operating system makes sense because the client is presented with the familiar and therefore desired operating system (claim 9). Data is sent and received from the smartphone over the internet using a transfer protocol (claim 10) after being processed by the server in the shortest possible time. The server farms are, for example, connected to a logical system, so that the work steps between the individual servers can be optimized. In this context, virtual servers, dedicated servers, and shared servers are possible.

This allows, for example, flat rates for every available app (according to corresponding contracts with software companies) and unlimited storage space (for a monthly fee, purchase, or advertising-funded). The user would then automatically always have the latest versions of the programs provided by the server farm operator. The user would also have the free choice or possibility of switching between different operating systems (e.g., for iPhones, Android smartphones, but also for desktop computers including old and current operating systems). In this context, open-source systems and software that can be used on the servers or via links are easier to implement.

Additional Features for the Software Solution:

The last app on one's existing smartphone would also compress all outgoing data (images, videos, sound, text, sensor data, etc.) beforehand and send it over the internet to the servers (claim 11), which then process the data. Immediately afterward, the data is sent back to the smartphone and converted back into changed images, videos, sound, text, etc., and displayed

(claim 12). A solution as the last app for one's smartphone would be much faster to implement compared to the hardware solution (see below) and could also spread very quickly. As an additional app on an existing smartphone, even old smartphones could benefit from the latest developments in the software industry. However, the prerequisite is hardware that supports fast wireless data transmission. The app could, of course, be programmed for all existing operating systems.

#### Additional Features for the Hardware Solution:

The online smartphone does not require the now immense processing power of current smartphones (claim 13). Besides the connection to the internet (if at all), only a few apps and a small (intermediate) storage space are necessary (claim 14). All components should be modular in design and quickly replaceable (even by oneself) in case of defects (claim 15).

For long-term acceptance, a very good display with high resolution, a good antenna for all frequency ranges, and various sensors (including acceleration, position, compass) are necessary, but these could also be retrofitted (claim 16). Additional required hardware would be, for example, for a phone (if no IP telephony), WLAN, Bluetooth, camera, flashlight/torch, GPS, and possibly a clock (if no web time, claim 17). A new operating system, specifically optimized for the online smartphone, could be useful on the device itself (claim 18). Since a specially developed operating system would be manageable compared to other operating systems and would probably require few or no updates, this operating system is conceivable as a hardware component and would then be significantly faster (claim 19).

This would also result in a longer runtime for the online smartphone, as the power consumption would be lower than comparable smartphones due to the low processor power, among other things.

In addition to implementation in smartphones, the above solutions can also be integrated into other hardware and software products: e.g., in video glasses, virtual reality (VR), in combination with retinal projectors, implanted hardware, mind control, e.g., via electrodes, tablets, and of course desktop computers or notebooks (claim 20). Finally, one could also work with these computers with all (if desired, even older) operating systems and any

software. Of course, the proven option of accessing the internet via (fiber optic) cable also exists.

## Claims

1. The last smartphone or the last app of a smartphone, characterized in that both solutions can display any software and any operating system on a smartphone.
2. The last smartphone or the last app of a smartphone, according to claim 1, characterized in that the data transmission between smartphone and servers is via end-to-end encryption (E2EE) and compressed (audio/video, sensor data transmission).
3. The last smartphone or the last app of a smartphone, according to one of the preceding claims, characterized in that only changes to the display are transmitted.
4. The last smartphone or the last app of a smartphone, according to one of the preceding claims, characterized in that temporary intermediate storage of data on the smartphone takes place.
5. The last smartphone or the last app of a smartphone, according to one of the preceding claims, characterized in that the online smartphone or the own smartphone with the corresponding app is used as a terminal/user-end device.
6. The last smartphone or the last app of a smartphone, according to one of the preceding claims, characterized in that programs of all kinds (including utilities, network services, games, access to a file system or a database) are executed on central servers for the client.
7. The last smartphone or the last app of a smartphone, according to one of the preceding claims, characterized in that the smartphone mainly serves for data input and output.
8. The last smartphone or the last app of a smartphone, according to one of the preceding claims,

characterized in that many already existing various (if necessary, adaptable) operating systems run on the servers, or a specially optimized operating system for the online smartphone runs.

9. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that a specially optimized operating system runs on the servers to display or emulate the usual operating system for the client.

10. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that the data sent and received by the smartphone are transmitted over the internet using a transfer protocol.

11. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that the last app of the smartphone compresses all outgoing data (images, videos, sound, text, sensor data, etc.) and then sends it over the internet to the servers.

12. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that, using the last app, the received (compressed) data from the servers is converted back into (changed) images, videos, sound, text, etc., and displayed.

13. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that the online smartphone is equipped with processors with comparatively low computing power.

14. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that no large number of apps and comparatively little storage space is installed on the online smartphone.

15. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that all components of the online smartphone are modular in design and quickly replaceable.

16. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that the online smartphone has a good display with high resolution, a good antenna for all frequency ranges, and various sensors, which, however, could be quickly retrofitted through a corresponding design of the smartphone.

17. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that the online smartphone has hardware for, among other things, telephony, WLAN, Bluetooth, camera, flashlight, GPS, and a clock.

18. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that an optimized operating system runs on the online smartphone.

19. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that on the online smartphone, the specially optimized operating system is installed as a hardware component/in a flash EEPROM memory.

20. The last smartphone or the last app of a smartphone, according to one of the preceding claims,  
characterized in that the above-mentioned solutions are integrated into other hardware and software products: e.g., in video glasses, virtual reality (VR), in combination with retinal projectors, implanted hardware, mind control, e.g., via electrodes, tablets, and of course in desktop computers or notebooks (also via fiber optic/cable).

No figures.