

# Augmented Reality and Cloud Platforms for Healthcare 4.0

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## Healthcare 4.0 enabling technologies

The technological landscape that enables Healthcare 4.0 is wide and constantly evolving: Big Data Analytics, Internet of Things, Augmented Reality, digital platforms, connected medical devices, telemedicine, Artificial Intelligence, robotic systems, 5G network, and many others.

To navigate within an increasingly rich and dynamic scenario, it is first of all necessary to have a clear idea of the concept of Healthcare 4.0.

*The term Health 4.0 (or Digital Health) refers to an approach that encourages the introduction of new technologies and elements of innovation within the healthcare system.*

Here are some examples.

Healthcare 4.0 makes use of lean and high-performance digital platforms that allow clinics, hospitals, and other healthcare entities to **make healthcare processes more efficient**, with a subsequent saving of costs and resources and an improvement in the quality of health services.

Furthermore, digital platforms make it possible to simplify the **interoperability** between information systems and improve the **collection of health data**, to perform faster and more precise large-scale data analysis (Big Data Analytics), also with the support of Artificial Intelligence algorithms.

In the context of Healthcare 4.0, telemedicine systems break down territorial barriers by supporting connected medical devices (to the Internet today, via the 5G network tomorrow) and expanding the **coverage of health care**.



On the one hand, the patient can take advantage of remote digital health services and have **new simple and immediate communication channels** available with the health system. On the other hand, healthcare personnel can count on more sophisticated tools that support them in providing **quality healthcare services** (even at a distance), which allow them to refine and accelerate the diagnosis, customize the treatment pathway, and improve verification adherence to therapy.

Not only that, Robotic and Augmented Reality systems provide valuable support to improve care and rehabilitation pathways, surgical techniques, maintenance and tracking of medical machinery, and remote training of healthcare personnel.

We have briefly touched on just a few of the digital health technologies. In this article, we focus on two excellent companies creating value and innovation in healthcare: **JoinPad for Augmented Reality in the medical field, Mia-Care for the world of digital platforms for Healthcare.**

## **JoinPad: Augmented Reality solutions for remote support and collaboration in the healthcare sector**

JoinPad develops **Augmented Reality (AR)** solutions for **collaboration and remote support** in various industrial sectors, from medical to manufacturing. AR technology allows the users to display information directly in the real environment captured through devices such as smartphones, tablets, or smart glasses. The latter allows working hands-free, displaying the indications of a remote operator directly in their field of view.

The high degree of interaction of the AR-based technological interfaces allows you to speed up communication flows, obtain data and information relevant to the context or object you are working on, and facilitate the comprehension of a problem.

The remote assistance platform, **Smart Assistance**, is used in hospitals to receive and provide remote support during ordinary and extraordinary maintenance of medical equipment, reducing downtime.

It can also be used to provide **patient services**. For example, in 2020, JoinPad collaborated with the Smart Glasses provider, LLVision, to allow Wuhan doctors to carry out preventive

diagnoses and communicate health measures to the population in compliance with the rules on social distancing.



*Wuhan 2020 – Healthcare worker uses Smart Assistance on LLVision Smart Glasses*

Another common use case relates to the **training** sessions of new doctors who can be guided by an expert doctor during a simulation of intervention, visualizing the parts that make up the human body in the form of high-quality 3D holograms.

Thus, the solution makes it possible to **facilitate and speed up work processes** by providing all the necessary data and information through a single tool.

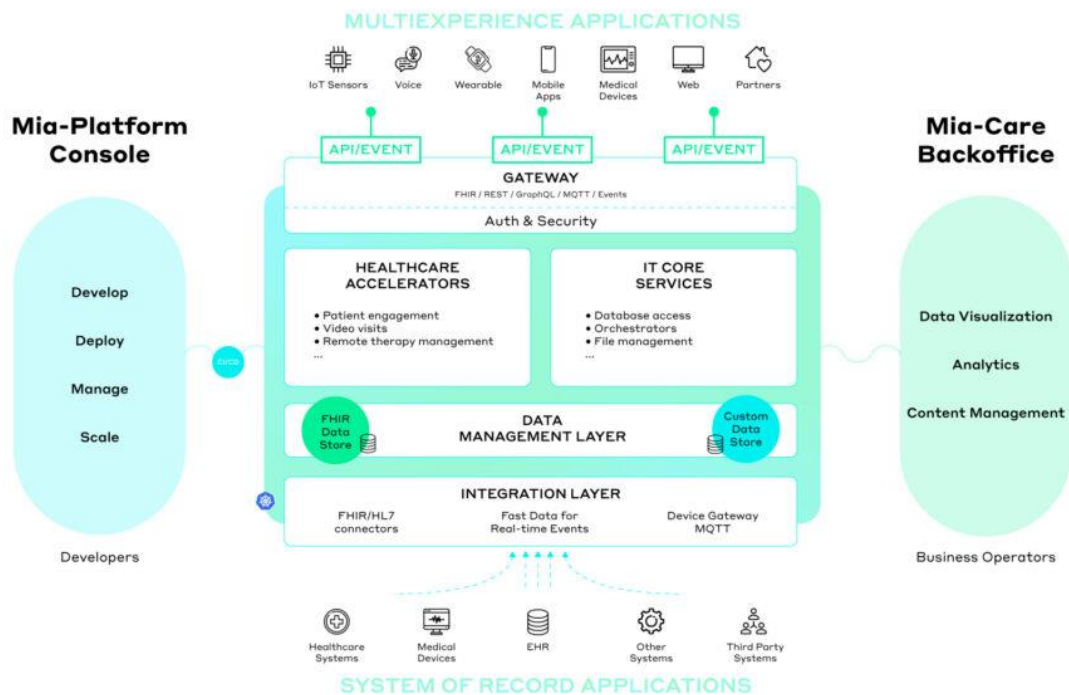
## **Mia-Care: The digital platform that simplifies the integration between information systems and technological devices in the Healthcare sector**

Mia-Care is an in-cloud platform based on an innovative technology stack that allows healthcare companies to **easily design, build, release, and arrange new digital products and services.**

Mia-Care's software product allows you to **improve access to data and interoperability between different systems and scale projects in a secure and regulated way**, accelerating time-to-market and reducing the costs of implementing and maintaining digital services.

Its streamlined and performing information architecture uses a DevOps development approach and is based on Microservices, APIs, and Fast Data for the development of cloud-native applications.

In addition, based on the distinctive experiences of the healthcare world, Mia-Care has developed **ready-to-use digital applications, which can be customized according to technological and business needs**, to allow maximum scalability of the healthcare services.



A few months from its release, several companies in the Healthcare world have already relied on Mia-Care as a technological partner to accelerate digital transformation.

To give an example, as part of the first projects launched for the **MedTech** sector, Mia-Care provides the right technology to develop a customized and patient-centered digital



platform connected to medical devices for the treatment of various chronic disorders and diseases.

Other projects involve **pharmaceutical companies, clinics, hospitals, and other healthcare facilities**, relating to the development of digital services that ensure an organic and fluid Digital Patient Journey in all its phases: from patient onboarding to booking visits and examinations, management and protected storage of health data; from doctor-patient communication to video consultation, to telemonitoring, up to governance and analytics issues.

## **The convergence between JoinPad's Augmented Reality and Mia-Care's cloud-native platform: innovation and technological excellence at the service of Healthcare**

Enhancing the interoperability between information systems and technological devices makes it possible to improve the collection and management of data, with significant benefits for healthcare facilities, medical staff, patients, and other players in the Healthcare system.

The aim is to create an integrated ecosystem that puts the patient at the center and evolves towards more inclusive and collaborative therapeutic-care models, where communication and sharing of data and information between healthcare facilities, doctors, and patients are facilitated.

Thus was born the collaboration between JoinPad and Mia-Care, which combines the **integration and scalability capacity of the Mia-care cloud platform** with the **innovation based on Augmented Reality technology**.

The technological excellence of Joinpad and Mia-Care meet and make high-performance technological tools available to companies in the medical sector that can improve the speed of delivery and quality of health services, even remotely.



## Mia-Care: your Digital Health Platform builder

Mia-Care is an innovative startup that supports the digital transformation of Pharma, Med Tech and Digital Health companies. Mia-Care software suite contains unique capabilities and resources to seamlessly design, build, deliver and orchestrate digital services leveraging a modern web architecture based on fast data, process automation, containerization and advanced analytics. The product is compliant by design with security and privacy regulations for EU and US applications and allows easy integration with EHR infrastructures.

Mia-Care was conceived from Mia-Platform state-of-the-art technology as the answer to the need for digitalization of healthcare providers.

Visit the website: <https://mia-care.io/>

## JoinPad

Active in the industrial sector since 2010, JoinPad provides Augmented Reality technologies for industrial processes. We help our customers simplify remote maintenance and assistance operations in complex industrial contexts, designing efficient AR solutions that provide the most relevant information. We reduce downtime and costs by improving collaboration, productivity and quality of work.

More information can be found at: <https://www.joinpad.net/>