

DEFINITION

real-time communications (RTC)

Real-time communications (RTC) is any mode of telecommunications in which all users can exchange information instantly or with negligible latency. In this context, the term 'real-time' is synonymous with 'live.'

AI, machine learning create more intelligent networks for real-time communications

Advancements in AI and machine learning enabled network components to intelligently identify the purpose of a packet based on [deep inspection](#) down to the seventh layer of the [Open Systems Interconnection model](#).

Administrators are no longer required to manually create identification rules. Instead, the administrator simply chooses the flows based on what the network device has automatically identified.

The next technology greatly improving and simplifying the ability to prioritize real-time communications traffic on networks is a centralized [control plane](#). With [software defined network](#) architectures, a centralized control plane architecture is the brains of the entire network and all of its components from one end to the other. Centralized control plane architecture is in opposition to a distributed, hop-by-hop architecture found in legacy network architectures.

Real-time communications vendors and products

Enterprise RTC providers run the gamut from major telecommunication carriers to small cloud startups. Real-time communications products and services in the UCC space include the following:

- 8x8 Virtual Office
- Adobe Connect
- AT&T Collaborate
- Avaya Cloud Office by RingCentral
- BlueJeans Meetings
- CenturyLink UCaaS
- Cisco Webex
- Dialpad Talk
- Fuze
- Google Hangouts, Meet and Voice
- Highfive
- Lifesize
- LogMeIn GoToConnect
- [Microsoft Teams](#)
- Mitel MiCloud
- Pexip Infinity
- Poly Studio X Series
- RingCentral Office
- Slack
- Verizon Unified Communications and Collaboration

Real-time communications examples

Real-time communications tools and applications are many and varied, ranging from old-school telephony to cloud communications services.

They include the following:

- fixed-line telephony
- mobile telephony
- voice over IP (VoIP)
- teleconferencing
- video calling
- video conferencing
- presence
- file sharing
- screen sharing
- automatic, live meeting transcription
- team messaging (real-time or near-real-time)
- one-to-one IM (real-time or near-real-time)
- live customer chat (real-time or near-real-time)
- robotic telepresence
- two-way or multiway amateur radio

The importance of real-time communications

Today's enterprise users expect to connect in real time from any location and device, making RTC a critical element of unified communications and collaboration ([UCC](#)).

Team messaging platforms, file-sharing tools and video conferencing systems enable geographically distributed and [mobile teams to engage virtually from almost anywhere](#), enabling a highly flexible workforce. Many businesses rely on IP-based real-time communications technology to minimize travel expenses, support remote employees and maximize team productivity.

The COVID-19 global pandemic dramatically underscored the importance of modern RTC tools, which enabled many organizations to remain functional and productive even while accommodating unanticipated and potentially long-term work-from-home requirements. With live telecommunications and collaboration technology, enterprise users can accomplish shared tasks that they otherwise would have needed to tackle in person in a formal office setting.

PROJECT DESCRIPTION

In our society, we have people with disabilities. The technology is developing day by day but no significant developments are undertaken for the betterment of these people. Communications between deaf-mute and a normal person has always been a challenging task. It is very difficult for mute people to convey their message to normal people. Since normal people are not trained on hand sign language. In emergency times conveying their message is very difficult. The human hand has remained a popular choice to convey information in situations where other forms like speech cannot be used. Voice Conversion System with Hand Gesture Recognition and translation will be very useful to have a proper conversation between a normal person and an impaired person in any language.

The project aims to develop a system that converts the sign language into a human hearing voice in the desired language to convey a message to normal people, as well as convert speech into understandable sign language for the deaf and dumb. We are making use of a convolution neural network to create a model that is trained on different hand gestures. An app is built which uses this model. This app enables deaf and dumb people to convey their information using signs which get converted to human-understandable language and speech is given as output.

