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## Video Teleconferencing System for Communication: Effective application during Covid-19 Pandemic and Augmented work Efficiency

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*“By means of outfit existence intended that permits you to be embraced virtually, video teleconferencing flattering ever shriller, and our social and idealistic lives progressively taking place online, the fissure between the physical and the virtual is accomplishment ever lesser”*

*Noreena Hertz*

### ABSTRACT

Videoconferencing(VTC) is a relatively motionless field for plentiful eons, a handful of large manufacturers produced a limited number of videoconferencing codecs or CPU and infrastructure components that were built around the protocols to provide audio-visual communication sessions on any packet network and Session Initiation Protocol standards, while the relatively new field of software-based VTC systems is likewise limited to a small collection of establishments.VTC is consists of two camera/microphone/display sets that communicate through some type of intermediary, networked device. The simple camera/microphone/display model quickly becomes inadequate as we consider proxies, gateways, gatekeepers, multi-point control units, multiple monitors, microphone arrays, pan-tilt-zoom cameras, and software platforms.

**Key Words:** Videoconferencing, Telecommunication Technology, Polycom Devices, IT Support, VTC Journey, Framework, Deployment.

### Introduction

1. A Video Tele Conference (VTC) system is a set of communicating telecommunication technologies which allow two or more locations to interact via two-way video and audio transmissions simultaneously. It has also been called ‘visual collaboration’ and is a type of groupware. Video Tele Conferencing (VTC) is becoming increasingly popular as a way to facilitate meetings and save time and money on travel and accommodation. It’s differs from video calls in that its designed to serve a conference rather than individuals. Each user needs computer, web cam, microphone and broadband internet connection for participation in video Teleconferencing (VTC). Users see and hear each other in real-time, allowing natural conversations. Video Tele Conferencing (VTC) system service is a popular alternative to physical meeting and wise choice to people.

2. In Bangladesh Video Teleconferencing (VTC) system has become a fundamental tool for businesses to enhance communication and collaboration between employees, partners and customers. Now a days Government offices and Non-government offices conduct their maximum number of official meetings by VTC.

3. Currently in the communication world Poly Video Tele Conferencing (VTC) System is the leading device that is using by “Army IT Support Organization” to support Bangladesh Army for digital world. Additionally, the AITSO has provided the technical, IT and VTC support to all the garrison/cantonment for conference as the ‘polycom device’ is used through Bangladesh Army Network. Through this recognition, AITSO gets the advantage of providing flexible collaboration solutions for any client environment that deliver the best user experience, the broadest multi- national interoperability and unmatched investment protection through Polycom Camera. Together, AITSO and Aamra Network are enabling a workforce that can connect, share and collaborate from any location with anyone, anywhere and from any device.

### Service Methodology

4. For providing service to Bangladesh Army, AITSO adopted a service methodology, largely based upon the principles of IT Infrastructure Library (ITIL). ITIL is the most widely recognized approach to IT services globally. Followings are the broad objectives of our service methodology. ITIL provides a systematic and professional approach to the management of IT service provision, and offers the following benefits:

- a. Reduction of communication costs.
- b. Improvement of services through the use of proven best practice processes.
- c. Improve customer satisfaction through a more professional approach to service delivery.
- d. Maintenance of international standards and guidance.
- e. Improve productivity and efficiency.
- f. Improved use of skills and experience

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### Support Strategy

5. Staffed by our team of engineers, technicians, and operators with a comprehensive knowledge of all aspects of video conferencing, polycom conferencing services provided vital operations, maintenance, management, and resource support for Army's conference room environments, systems, and calls. In addition, our team is educated on Bangladesh Army's specific requirements in order to help them deliver a conferencing experience that lives up to expectations. Following action plans were adopted for successful implementation and maintenance of video conferencing in Bangladesh Army.

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### Support Readiness

6. From the physical environment to the conferencing system to the calls, AITSO has provided readiness support services that ensure that your video Teleconferencing (VTC) solution is always prepared for use. We test and confirm that all video Teleconferencing (VTC) system endpoints will connect to their required destinations and provide clear, high-quality, and continuous communication during sessions. Equipment and other system-related issues and their resolutions are communicated regularly. Our readiness service is performed for both classified and sensitive but unclassified communications, and in point-to-point and multi-point arrangements during normal business hours - as well as extended hours. Our service and support are open for Bangladesh Army 24/7 days with dedication and sincerity.

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### Effective Troubleshooting

7. Whenever problems have arose like result of setup failures or poor performance AITSO VTC team has dedicatedly assisted and escalated to our senior staff members who are experienced in setup and endpoint management.

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### Rapid Recovery

8. We understand the value of service uptime for Bangladesh Army's operation, with that in mind we have always made sure that rapid recovery is ensured in cases of a technical fault or error. This has been done in collaboration of rapid troubleshooting, equipment maintenance, part fixing and device monitoring.

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### Preventative Maintenance

9. Our maintenance service provides thorough preventative maintenance and inspection support for Bangladesh Army's devices and systems. Our experienced, technically certified professionals have extensive experience in deploying, operating and maintaining Poly platforms - and will ensure proactive maintenance of the video conferencing (VTC) system components at various Army premises all over Bangladesh. Our networks limited believes that collaboration and remote communication is truly efficient when the client and its stakeholders are proficient in usage and ownership of the technology. On this principle, from the very beginning of AITSO- Bangladesh Army video teleconferencing (VTC) journey, both parties have worked side by side to ensure soldiers, staff and officers of Bangladesh Army are proficient and prolific users of Poly. There have been countless training sessions between Bangladesh Army and aamra, which played a large role in making sure that the knowledge transfer process is extensive and effective.

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### Current Predetermined Framework

10. Under the current contractual framework between VTC device suppliers and Bangladesh Army, we are successfully providing technical maintenance support to various locations of Bangladesh Army.

- a. *Implementation:* AITSO is responsible for collaborating with Poly and make sure that required devices are procured and implemented in designated locations of Bangladesh Army, as per Army's desire.
- b. *Accessories:* AITSO is also responsible for supplying some accessories related to video teleconferencing (VTC) under the contract made with Bangladesh Army. As per the contract, Bangladesh Army is maintaining all the devices with due care and diligence. On the others hand, AITSO is providing full technical support with continuation.

c. *Trainings*: AITSO has been providing training sessions every year for at least 4 working days on their selected locations. Under the contract aamra has provided periodic trainings on Poly device management to selected Army Officers. Certificates are also provided to the participants after completion of training.

d. *Replacement*: Inside or outside of Dhaka whenever any device has faced any problem AITSO has replaced and/or taken necessary actions (contingent to valid reasons) to fix the issue within 2/3 days according to the agreement.

f. *PolySupport*: AITSO maintains backend contract with Poly while keeping the contract with Bangladesh Army, making sure that Poly's technical resources are available when required in critical errors.

g. *EmergencyManagement*: AITSO is responsible for providing technical support in case of emergency as part of its contractual obligation.

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## Advantages of Poly Group Series

11. Poly Real Presence Collaboration Server connects people in multiple locations allowing them to simultaneously see each other and share ideas visually. The multiparty calling capability connects conferencing devices and software apps running on different protocols to ensure interoperability. Poly Real Presence Group Series is the engine that drives enterprise-grade video, voice and collaboration experiences, accelerating decision-making and fostering innovation. Only Poly delivers video collaboration experiences that bring users closer together, helping geographically dispersed teams harness information and knowledge to improve efficiency and productivity. Next-generation collaboration tools ensure that everyone is involved in all aspects of the conversation, with interactive content on any device. Standard based interoperability and certification with Microsoft Skype for Business and Office 365 ensures that the experience is a scalable and manageable part of the user connectivity experience that users are already familiar with. Share content up to 1080p resolution at 60 frames per second – video clips, CAD animations, medical diagrams, or anything else you can dream up. It's easy to share content using the HDMI or VGA connections or wirelessly from your laptop or mobile device. For advanced content collaboration and group video teleconferencing (VTC), connect to Poly Pano for easy wireless sharing from up to 4 users at the same time plus annotation and white boarding when using a touch display.

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## Video Experiences

12. Video experiences are as follows:

- a. EagleEye Producer uses innovative facial-tracking algorithms to accurately frame all room participants or focus on the person speaking- whichever you prefer, eliminating the "bowling alley" view that is all too common in video calls.
- b. For a more immersive feel, EagleEye Director II offers the highest performance speaker tracking experience, transmitting facial expressions and body language for higher impact and more productive group video collaboration.
- c. Real Presence Touch makes it simple and intuitive to start and control calls, including one touch dialing from the integrated calendar
- d. Wirelessly share content from your own laptop or mobile device.

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## Audio Experiences

13. Audio Experiences are as follows:

- a. Real Presence Group Series features the ultimate voice clarity, automatically reducing background noises and delivering advanced echo cancellation to keep meetings on track and free from distractions.
- b. Lost Packet Recovery protects the audio and video in challenging network environments, keeping the experience optimal for users even in difficult network conditions.
- c. Poly Noise Block technology keeps annoying sounds such as keyboard clicking and paper rustling from interrupting your meetings.
- d. Poly Acoustic Fence captures sounds from inside the virtual fence while blocking those from outside, enabling group video collaboration in open workspaces.
- e. Add Poly Sound Structure to enable highly sophisticated audio tuning and configuration, plus the ability to add dozens of additional microphones, delivering clarity for everyone even in your largest spaces.

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### Benefits of using Video Conferencing Solution in Bangladesh.

14. The benefits of video teleconferencing system in any organizations are widespread. That being said, there are very specific benefits that Poly solutions has provided to Bangladesh Army.

a. **Quality of Communication:** Military personnel no longer have to communicate with their fellow officers and/or soldiers with inefficient and impersonal methods such as phone, free web solutions etc. Crystal clear pictures and audio makes communication and command much easier and efficient.

b. **Security:** Usual communications systems are not safe and not always ideal for military environment. Poly aligns with ISO/IEC 27001:2013 for our Information Security Management System (ISMS). ISO/IEC 27001 is the most widely accepted international standard for information security best.

c. **Practices.** Poly Product Security Standards align with NIST Special Publication 800-53, ISO/IEC 27001:2013 and OWASP for application security. With Poly's state-of-the-art security protocols and advanced features, Bangladesh Army's communication remains secured and confidential.

d. **Convenience:** Meetings between cantonments at different vantage points have become easier. This has brought about a reduction in travel costs, and travel time. High level meetings can be convened in minutes, with faster decisions based on the collaborative efforts of Army seniors round the world.

e. **Military Trainings:** While this is one aspect that is yet to be fully explored in Bangladesh Army, from aamra we consider this to be a great scope of future implementation. Poly Video conferencing solutions can facilitate more comprehensive, engaging and timely military training. Experts around the country, and around the world, are now only a few feet away.

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### Video Tele Conferencing during COVID-19 Pandemic

25. The face of video telecommunication has changed dramatically due to the global pandemic. In 2020, there's a huge range of video communication platforms to choose from based on needs which is spurring the growth of the global video conferencing markets. Global video conferencing industry is expected to gain traction during the coronavirus outbreak as the enterprises and government organizations are considering video conferencing as an ultimate solution to connect with remote workers, customers, and employees; and, at the same time, it prevents direct contact with the people. In order to cultivate working environments which encourage true collaboration and ongoing communication, we can't rely on Zoom and Teams forever. Employees are going to need more sophisticated video conferencing resource going forward and now might just be the best time to invest. Presence disparity, socialization and disjointed communication are all problems we face with extended periods of remote working and time away from the office. As we consider our workplace moving forward, and how we might need to adjust and adapt whilst still maintaining the processes which were working well before, we need to consider video conference and communication resource.

16. Collaboration tools such as Zoom and Microsoft Teams have been great and will continue to have their place but for a solution with more longevity, video conferencing technology pips them to the post. Not least because of the improvement in image and audio quality, which both enhance the experience – and therefore participation and engagement – of all involved. Good quality audio means better communication; high quality image means more effective interpretation of facial expressions, body language and eye contact – all valuable elements of face-to-face interaction that might otherwise be missed. The beauty of video conferencing is how it enables us to scale up and shake up our teams, subsequently opening employees up to new forms of co-working that might otherwise be restricted. Take geographical location for example- when we aren't limited to a physical meeting space, we can form fully functioning teams from employees in offices or locations around the country, or even the world. This diversification allows you to foster strong, inclusive and holistic teams which cover all bases in terms of collaboration and participation. It goes without saying Pandemic has explored unlimited potential of video conferencing innovation for future workplaces.

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### Use of Video Tele Conferencing in Military Environment

17. Most federal governmental agencies-as well as all NATO/OTAN member countries-use video collaboration technologies at some level for some types of applications. All too often, though, meetings are the central application and many times the technologies in the conference room are set aside for senior staff. Respected Chief of Army has taken all the PSO's meeting, Formation commanders meeting, Core Command conference and any types of command conference via Polycom VTC. During this COVID-19 pandemic we have completed 569 numbers of VTC within Bangladesh Army. Honorable Prime Minister has given her directives via our existing VTC.

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## Training and Doctrine Command

18. Training and Doctrine Command (TRADOC) of US Army is tasked with the global responsibility of overseeing training of Army forces, the development of operational doctrine, and the development and procurement of new weapons systems. Included in this mission are the developing, educating, and training of soldiers, civilians, and leaders, and supporting unit training. Thus, TRADOC's charter ranges from basic training to high-level leadership skills, and from the physical to the mental, psychological, and more. TRADOC executes its mission through six major subordinate centers and commands and all these centers are connected through Poly video conferencing. The organization operates 32 Army schools at dozens of different locations. TRADOC schools conduct more than 1,300 courses and more than 100 language courses. Its courses train almost 600,000 soldiers and service members each year via resident, on-site and distributed learning-more than 500,000 Army soldiers; more than 45,000 personnel from other branches of the military; more than 32,000 civilian personnel; and almost 10,000 international learners. And TRADOC uses a wide variety of technologies- including video collaboration-to deliver home station, distributed training to soldiers and service members who may be between overseas deployments or otherwise unable to travel to training centers. TRADOC'S objective is to create the right infrastructure needed to support a wide variety of schools by leveraging different types of classrooms.

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## Conclusion

19. Bangladesh Army has made remarkable strides and technological advancements by implementing video Teleconferencing (VTC) solutions. Video Teleconferencing (VTC) solution has made it flexible for Bangladesh Army to collaborate with officers and troops posted in different cantonments. We foresee arrays of excellent scopes of videoteleconferencing (VTC) innovation in Bangladesh Army in the near future. We are always ready to serve for our Nationsbenefit so that nothing can stop them to fulfill our duty for our motherland. From AITSO, we look forward towards continued cooperation and innovation with AITSO and Bangladesh Army.

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