Satellite communication and remote sensing pdf

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A Gallup study found that 51% of employees would switch companies to work for one with more flexible working arrangements and that the most employed employees spend 60 to 80% of their time working remotely (up from 20% in 2012). But technological advances ranging from web conferences to software collaborations cannot replace a lack of communication, an area in which many companies have fallen short. Remote workers report being shunned and left behind because of a lack of personal time with their teams, and a third of them say they don't have time to meet their teams in person. As a result, remote colleagues say they are more likely to feel like gang colleagues are on them, don't fight for their priorities, and change projects without warning them. 4 Tips for Improving Remote Command Communication All of these problems are related to poor remote command communication. If your own team becomes more fragmented, you should actively look for areas where communication and interaction are likely to suffer because of distance. The next four steps can set the tone for a remote team that is warm, inclusive, and productive. 1. Write and share user guides with your user guide team is a written guide that helps others (such as your colleagues) learn more about you: when you are most productive, what motivates you, why you get annoyed, and how to contact you when they urgently need something. If it seems too personal for work, here's the thing. Most employees spend more time with their colleagues than with their friends and families. Even so, many of us remain to draw conclusions about our colleagues, from communicative preferences to what they actually mean when they say it's OK when making a request. Remote teams cannot afford to guess how their colleagues think, feel and work. When it is not possible to read body language and other social cues through a common personal space, leaders should encourage active communication in their teams. The user's guide achieves this by offering an insight into each employee's personal values, work styles, and preferences. A few years ago, my own disparate team wrote and shared our user guides. Exercise worked best when we structure our guides into six sections: My style Of What I appreciate is that I don't have the patience to communicate with me what people misunderstand about me How to help me user guides are most effective when everyone on the team writes their own and then shares them in a saved drive where they are readily available. Once you've collected all the manuals, use the software for web conferences to meet with specific groups, where everyone shares their guides. 2. Accept asynchronous communication The most remote communication team takes place in writing, whether by email or collaboration software. What's the problem? Written message has a reputation for be tough to decipher. The lack of social signals in remote commands can lead to anxiety, disconnection and lack of innovation. To prevent this from being in your own team, by default practices asynchronous communication-sending messages without waiting for instant answers. This is the most realistic way to reach remote groups that operate in multiple time zones. Asynchronous is not synonymous infrequently; It's the other way around. As a remote team leader, strive for over-communication. If your expectations aren't explicit, you can't expect your team @mention to match them. Create and share a process document with the entire team that explains what actions they should take if they need to make an urgent request, and store the document in the same space as your team's user manuals. Reserve instant responses to deadline requests. If your asynchronous communication is clear, concise and explains the why behind each request, then you don't need to use them often. 3. Priorities video calls Lack of in-person social cues on remote groups continues to come up for a reason. Not being able to see someone's face or body language prevents communication. This is why your first choice for meetings, weekly check-ins, daily standups, etc. should be video calls. This is especially true for the inevitable tough talk. Whenever you need to meet to discuss missed goals, a performance plan, or similar topics, schedule a video call. In such cases, a written communication is not enough to resolve the issue at hand. You should hold all virtual meetings the way you would have held them in person: first deliver your main message, and then clearly outline the next steps for your team. If you need to give hard news, work on developing your message in a positive way in advance. Always end up meeting with time for questions and let people know where they can follow one-on-one if necessary. Your goal in using video is to create as much face-to-face interaction as possible. Paired with clear written communication, you will create psychological security for your team (which is critical to retaining employees). 4. Allocate a budget for personal offsites Average business with a full workforce of remote labor saves $10,000 per employee per year. Similarly, the average office space in the U.S. costs between $8 and $23 per square foot, with rising costs along with the number of employees. This savings allows leaders to reinvest money back into their business. If your team is completely removed, respond part of this savings to personal sites where your team can meet in person. Bringing together all colleagues in one physical space creates a deep level of trust and It is also an ideal time to share and strengthen the company's goals. In your place, the lead team can share key accomplishments over the past six months or year, announce new initiatives for upcoming quarters, and host team lunches/field trips to help interagency peers meet each other. By punctuating strategic sessions with team meals and outs, you can create a feeling of warmth that goes beyond remote work. The goal is to get the whole organization personally at least once, if not twice a year. Try to choose a place that is central to as many colleagues as possible. This will minimize the cost of your business as well as the time it takes employees to travel to and out of the hunt. Work at the time of future remote work is far from time. As of February 2020, five percent of Americans worked remotely full-time. In light of the COVID-19 outbreak, this number is sure to increase dramatically. In addition to reaping the benefits of increased productivity, managers of remote employees should be proactive in communicating. If you get it right, you stand to brag, happier, healthier, and more busy employees in general. In the middle of the night, invisible to all but special telescopes in two Chinese observatories, the Micius satellite sends particles of light to Earth to establish the world's safest communications connection. Named after an ancient Chinese philosopher also known as Mosi, Micius is the world's first quantum communications satellite and has been at the forefront of quantum encryption for several years. Scientists have now reported using this technology to reach an important milestone: a long-range communication that can be trusted without even trusting the satellite through which it passes. Launched in 2016, Micius has already made a number of breakthroughs as part of its operating team led by Pan Jian Wei, China's Father of quantum. The satellite is the source of a pair of tangled photons, twinned light particles whose properties remain intertwined no matter how far apart they are. If you manipulate one of the photons, the other will also be affected at the same moment. It is this property that underlies the safest forms of quantum cryptography, the distribution of quantum keys based on entanglement. If you use one of the tangled particles to create a key for encoding messages, only a person with another particle can decipher them. Micius has previously produced tangled photons and delivered them to two ground stations (observatories) 1,200 km apart using special telescopes. Scientists have shown that photons reach Earth as confused as in orbit. Then, in 2017, the Micius team used photos for encrypting gear, which allowed to visit a virtual meeting between the Austrian and Chinese scientific academies in Vienna and Beijing respectively - 7,400 km from each other. This included designing equipment for clues and mechanism to prevent malicious attacks, such as blinding telescopes with other light signals. None of the messages went through Mitsius. It only produces and distributes encryption keys. But both ground stations had to talk and trust Micius as part of their communication systems and use it as a relay before establishing communication with each other. The quantum encryption relies on tangled particles of light. A new paper by jurik Peter/ShutterstockA from the Pan Jia-Wei laboratory, published in the journal Nature, shows that Micius has again successfully brought quantum cryptography based on entanglement to its original ground stations 1,200 km apart. But this time the satellite sent simultaneous streams of tangled photons to the ground stations to establish a direct link between the two. This gave them reliable, indestructible cryptographic protection without having to trust the satellite. Until now, this has never been done via satellite or at such long distances. Again, none of the messages went through Micius. The satellite provided tangled photons as a convenient resource for quantum cryptography, and the two ground stations then used them in accordance with the agreed protocol. The new article does not specify how the messages were transmitted in this case, but theoretically it could be done by optical fiber, another communications satellite, radio or any other method by which they agree. The quantum race Safe long-distance links, such as this one, will be the basis of the quantum Internet, a future global network with additional security, working on the laws of quantum mechanics, disproportionate to classical cryptographic methods. The launch of Micius and the records set by scientists and engineers, which create quantum communication systems with its help, have been compared to the influence of Sputnik on the space race in the 20th century. Similarly, the quantum race has political and military implications that are hard to ignore. Mr. Jian-Wei was accused of disclosing Internet surveillance information by Western governments in 2013, prompting China to increase research in quantum cryptography to create safer communications tools. As a result, Micius was named Sputnik for ultra-paranoid. In theory, any country could trust Micius in providing tangled photons to ensure the security of its communications. But the satellite is a strategic resource that other countries probably want to replicate, just as Europe, Russia and China currently have their own versions of U.S.-controlled GPS. However, the news of successful long-distance quantum communication is a sign that we are already living in a new era of communication security. This article is republished from a talk by Harun Sillak, postdoctoral researcher in Complex Systems of Science for Telecommunications, Trinity College Dublin as part of Creative Commons Commons Read the original article. 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