

Capturing the future: How 5G could enhance and upgrade our photos

By Alex Cooke March 16, 2021

Around the world, we're taking more photos than ever and relying on images to tell stories and deliver news. 5G could give professionals and everyday shutterbugs the tools necessary to keep up with demand.

The world now communicates, interacts and experiences itself through visual media. In the last five years, the number of [Instagram users has doubled](#) from 428 million to nearly 1 billion. It's estimated that over [1.4 trillion photos were taken in 2020](#). From sharing photos with friends and family to keeping up with current events, people expect to be able to create, share and digest high-quality images and video in real time, meaning wireless networks need to be able to move massive amounts of data quickly and reliably.

This has led to a boom in creativity and a surge in the quality and resolution of images that even an average person can create. In 2016, the bestselling smartphone, the iPhone 7, featured a 12-megapixel camera. Now, phones like the Samsung Galaxy S21 Ultra 5G shoot photos up to a whopping 108 megapixels that could create high-resolution images as large as 32 MB (the average smartphone photo currently only takes up about 1.8 MB for a 12-megapixel JPEG). In the past, 4G networks have allowed us to share images with ease, whether on social media, email or messages, but 5G technology could allow us to embrace a future of ultra-high-resolution photos that can be stored, shared and digested at breakneck speeds, unencumbered by tech hardware that is currently required.

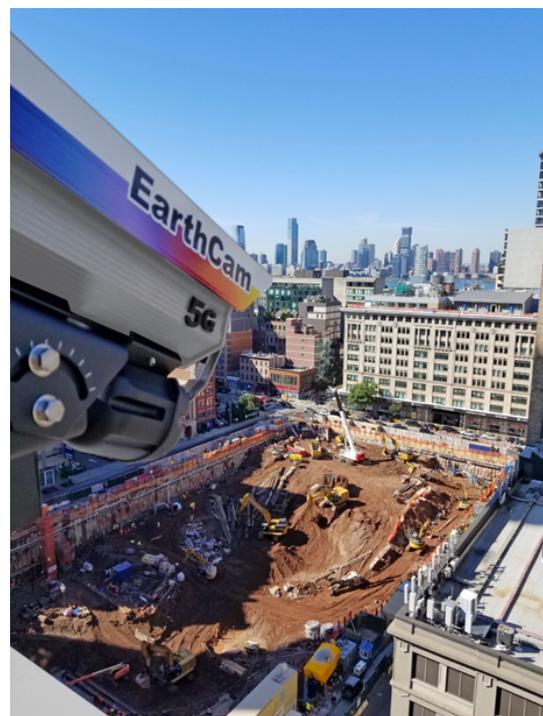
How 5G could change a pro's workflow

A wedding photographer can easily shoot 4,000 images for a single ceremony and reception. A modern high-resolution camera such as the Sony a7R IV produces raw files (the professional standard in photography) that are approximately 120 MB per image, which means a wedding photographer can easily come home with almost 500 GB of data. Ingesting, backing up and preparing these images for processing is a Herculean task for the photographer and one that they don't take lightly: There are no do-overs in wedding photography. Even a single lost memory card can spell disaster. A simple Google search yields dozens of stories of photographers losing cards or having their equipment stolen before they can get home to back up their images.

Imagine, though, if a photographer didn't have to worry about this as much because they could back up those huge files as they took them. They'd feel secure, and they'd be ready to edit the moment they walked into their office.

5G technology could make all these things possible, and more. Verizon reports that its 5G Ultra Wideband speeds can exceed 1.0 Gbps. That means 500 GB of data can be moved in a little over an hour. The aforementioned wedding photographer could simply keep their phone in their pocket, connected to their camera, uploading their images essentially in real time to create virtual backups.

Similar benefits would extend to other genres of photography in which creatives need high levels of connectivity. Sports photographers and photojournalists who are shooting events in real time could get their images into the hands of editors literally in seconds. With essentially real-time 5G backup as a possibility, a photographer would no longer have to juggle a laptop and hard drives to try to back up images. Instead, they could focus on what matters — the birthday party, the tennis match, the newsworthy moment — knowing that their photos were backed up to the cloud basically the instant they were taken.



How 5G technology is already changing the way we create images

We are already seeing applications that allow for such quick upload speeds coming to fruition. [EarthCam](#) recently announced the [StreamCam 5G](#), a 5G multi-network camera system, which offers 4K streaming and 10-megapixel photos along with built-in time-lapse capabilities. In the past, transferring a full day of security recordings would take over two hours. With the new StreamCam 5G, the same process takes less than five minutes, easily allowing users to keep up to date on the progress of a project or the status of a habitat.

According to the company, a month's worth of gigapixel raw files used to create high-quality time-lapses can be transferred in 50 minutes — something that would have taken at least 28 hours in the past. Even more exciting is EarthCam's AI technology, whose capabilities include reconstructing time lapses corrupted by something like dirt on the lens and continuously monitoring individual social distancing and mask usage to ensure safe COVID-19 practices.

Imagine if scientists could use a similar 5G camera to monitor an ecological site in real time with enough resolution to evaluate minute details that could have a critical impact. They could possibly use the AI technology to be alerted when an animal comes into view or a crack appears in a glacier.

How 5G technology will help preserve our images

With phones becoming the primary means of capturing memories for many consumers, photo library totals often reach into the tens of thousands. And with smartphone cameras growing even more advanced and the images—including ultra-high resolution and 3D images—taking up even more data, the need to store these images is even greater. The addition of 5G technology could allow consumers to easily and almost instantly share large batches of images and videos with family and friends and to back them up to the cloud, secure in the knowledge that if their phone is ever lost, their recorded memories will not necessarily be gone with it.

Photos and video have become integral to modern life, and increased consumption, combined with ever-increasing image resolution and file sizes, continues to create more demand for ultra-fast wireless networks. 5G speeds could help to realize virtually instantaneous interaction with high-resolution photo and video, while enabling more complex and fruitful applications than we have ever seen before.

About the author(s):

Alex Cooke is the editor-in-chief for the popular photography and videography blog [Fstoppers](#). As a mathematician and photographer, he has a keen interest in the interaction between science and imagery and the societal and technological potential of these applications.