

5G coming “soon” to mobile phones, but already has a quiet foothold on campus

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Recently, Qualcomm announced that by the first half of 2018, we will be seeing the first 5th generation (5G) wireless modems in phones. The first of these will be the Qualcomm Snapdragon X50, which will support speeds “up to 5Gbps.” To provide some perspective, 4G LTE has only just recently broken into Gigabit territory with modems like the Snapdragon X16. Even so, most 4G LTE connections will provide up to 450Mbps, and that’s pushing a bit considering most consumers will not have these kinds of speeds most of the time. That said, 5G aims not only to provide greater bandwidth and network speed for users, but also greater network stability.

Last year, I had the opportunity to attend a real-time communication (RTC) conference thanks to taking ITM 440 (Data Networking) with Professor Carol Davids here at Illinois Tech. I was very intrigued by the sound of the 5G network presentation, and my attendance was not wasted. The gist of the presentation was that the key word would be “stability” for the coming wireless generation. Stability, in this context, refers to maintaining a constant, uninterrupted network connection. Clearly, you can see why this is a good thing, but a brief read of the Nokia 5G white papers pointed out a couple of use cases that demonstrate the value of stability. Due to the projected minimization of latency by 5G (less than one millisecond ping,) a remote surgery could be performed by a robot with almost one-to-one precision of remote commands to surgical

motions. In the world of utility, data could be constantly monitored wirelessly to such a degree that manual human surveillance would be unnecessary. Instead, more time could be spent actually fixing leaks, for instance. What these examples shed light on is that we are reaching a point where wireless will be stable and sustainable to the point that we can reasonably rely on it for needs far outside the scope of just entertainment.

All said, there has been a functioning 5G network of sorts on campus since 2013, named Eduroam. This is a wireless network that Illinois Tech students and students from many other schools can access with their regular university credentials. Not only does it have the greatest range of any wireless on campus (from my usage), but you can log on to it with your respective college credentials

from any college that provides Eduroam. Now, the speeds you get will not be significantly higher than IIT-Secure or Connect by using Eduroam, but the network itself embodies this idea of stability and seamless internet usage, as indicated by the universal credential setup. Keep this in mind; Illinois Tech has been helping pioneer the next generation of wireless for some time now, even if on a small scale.

If you’re interested in finding out more, you can find Nokia’s 5G white paper on their website simply by providing your email. The 2015 RTC conference 5G presentation can be found with a Google search. Look forward to seeing 5G come to a phone near you in the coming years.

Exploring Springfield, the often ignored capital of Illinois

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In addition to Springfield being the state capitol of the state of Illinois, the city has significant ties to the sixteenth President of the United States: Abraham Lincoln. The fact that the city is the capitol of the state is directly linked to this legendary statesman, who successfully convinced the rest of the state government to move to a more central location in the state rather than near the Mississippi River. The legacy of President Lincoln is seen across the city, with numerous statues, plaques, and business being named for Lincoln. In addition to these honors and commemorations, the original home, grave, and presidential library and museum for Abraham Lincoln are located within the city limits. This is fitting, as the city of Springfield is responsible for making the great emancipator the politician who successfully held together the union.

The presidential library is one of the most visited attractions in Springfield, containing the numerous artifacts and works of Abraham Lincoln. While the museum itself is a big part of the attraction, the library is not to be overstated, as the archives contain some of the most well preserved documents and relics of the Civil War. In addition to these attractions, the museum is also host to numerous annual events, seasonal exhibits, and a large museum gift shop which has been visited by several celebrities who have visited the city, including late night host Conan O’Brien.

Several blocks away from the museum and old state capital is another historical site connected to Lincoln: his family home. The Lincoln home and the surrounding neighborhood have been restored to their appearance in the mid nineteenth-century and have been maintained by the National Park Service as one of only two park sites in the entire state. The house itself has been relatively untouched since the Lincoln family left for

Washington D.C. at the start of Lincoln’s presidency. Much of the carpeting, antiques, and furniture in the house are the originals or exact replicas chosen by former first lady Mary Todd Lincoln herself and used by the rest of the family for all the years Lincoln served as a state representative. The house and the rest of the neighborhood are opened to public every day and tours are free. In addition, the park service provides a visitor center with a gift shop and theater on site that plays several films talking about the city back in the 1850’s and Lincoln’s rise in politics. For history buffs, this site is a must see.

Farther away from downtown Springfield is the final resting place for several members of the Lincoln family, including the president himself. The Lincoln tomb in the Oak Ridge Cemetery holds the crypt of the President Abraham Lincoln, First Lady Mary Todd Lincoln, and three of his children. The bust of Lincoln in the front of the structure has been worn down over the years as many have rubbed the Lincoln nose for good luck.

The tomb itself was reconstructed in the Art Deco style of the 1930’s and had its 150th anniversary commemoration last year. The incredibly fortified and protected tomb is like this for a good reason: tomb raiders have tried to steal Lincoln’s body in the past. In addition to this several war memorials surround the structure, paying tribute to the soldiers that served under Lincoln, and whose statues now overlook the tomb.

Much of Springfield is easily accessible to students at Illinois Tech, despite being over one hundred miles away. Amtrak serves the city daily from Union Station in downtown Chicago, which is serviced by the school shuttle bus on weekdays, the CTA bus 151, and the Blue Line Clinton station which can be reached by transferring from the Red Line Jackson station or using the CTA bus 21, which runs through the campus on State Street. Though a somewhat difficult trip to make, the trip is worth the effort to see and do all Springfield offers tourists who are willing to make the journey.



Photos by Steven Milan Moreno