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Good morning, Chairman Hall, Vice Chair Claggett, Ranking Member Abdullahi, and members of House Technology & Innovation Committee, it is my pleasure to present sponsor testimony on HB 357. I would like to thank Chairman Hall for calling this committee hearing to discuss a critical matter facing any Ohioan with a mobile phone, text messaging security.

The thinking behind HB 357 is simple. One of our core communication tools, text messaging, is woefully out of date. The failure to update and improve it has put all Ohioans, whether they have an iPhone or a device that uses the Android operating system, unnecessarily at risk. The four requirements in HB 357 -- encryption, preserving the quality of images and video, and adding the ability to see when a user is typing and when they have received a message -- are not revolutionary. Some, if not all, are standard in other communication tools we use every day, like email, iMessage, and WhatsApp. Texting in the US is more popular than ever: more than two trillion texts are sent in the US alone every year. That's about 16 million per minute. Passing this bill will help make one of the most common ways we communicate in Ohio substantially safer.

That's the high-level. Here's the backstory. Most texting today uses a messaging a standard called 'Short Message Service', also known as SMS. SMS was first introduced more than thirty years ago and unfortunately, unlike most standards has barely evolved at all. On some level, it's no surprise: SMS texting is quick, effective, and works across practically any mobile device. You could be using a brand new iPhone and exchange texts with a friend using an inexpensive flip phone. Considering how many different devices are out there today, that's pretty impressive. It's easy to put this on the backburner, 'If it ain't broke, don't fix it'. The problem is texting is broken. It falls short on a laundry list of safety criteria that we expect from messaging today.

Let's start with encryption. SMS texts are incapable of encryption of any kind. That means, if a message is intercepted, its contents can be read. What's written in an SMS text is about as private and secure as what's written on a postcard. Compromising an SMS text would bore even an amateur hacker. A 2021 investigation from the news outlet Vice found that an entire device's texts could be hacked for sixteen dollars. No doubt, technology has only improved since then. SMS texting also lacks other basic functions that we've come to expect from communication tools. Photos and videos often look blurry and pixelated, and you can't know when a message has been read or if a person is typing a response.

Those may sound like minor annoyances, and if we were talking about some niche technology, maybe they would be. But, texting isn't niche: there are more texts than phone calls exchanged per day in the US. Everyone texts, including public safety officials and our first responders. They aren't set up to succeed because texting falls short. For example; during an investigation, Ohio law enforcement officers may be exchanging relevant information via text. If they send a blurry picture of a license plate or a pixelated video of a suspect fleeing a crime scene, then they might as well have not sent it. Imagine a dangerous situation where it's not safe to speak, if someone has been kidnapped or if they are in an active shooter situation. An image or video may be the only thing they can send. Those messages need to work, and users need to know their messages are going

through; their lives depend on those texts working. And that's today. Looking ahead, these issues will prevent our current emergency response system from developing into something truly cutting edge and useful. As you know, in many parts of Ohio – including my district -- Ohioans can text 911 in the event of an emergency.

But text to 911 is only available via SMS. Shouldn't it be possible to send an image of an intruder in your home? Or video chat with a first responder if a loved one needs CPR and you don't know how to do it? This is the vision for Next Generation 911, an initiative we're all familiar with thanks to the extensive work done on SB 50 (Senator Wilson and Smith) last year. I think this language got added into the budget and needs to be fixed. I have heard rumors that some lobbyists are looking for a Christmas tree bill during lame duck to make changes to the current language.

Taking a step back, this all may sound obscure, maybe overly technical. But I'd wager you've all run into this at some point or another. That's because any time texts are exchanged between iPhones and phones using the Android operating system, they are sent via SMS. Together, those platforms make up 99.5% of the market in the US. If you're using an iPhone, this is what's going on when your conversation has both green and blue bubbles in it. But, the colors of the bubbles are the tip of the spear and aren't the real issue anyways. What's really going on is under the hood. To their credit, Apple has publicly committed to an update that would address some of these issues: building support for a new standard called Rich Communication Services, or RCS, into their texting service, iMessage. It's an encouraging signal, but until the work is actually done, and includes the encryption technology that keeps people's data private and secure, it's just lip-service.

I'd like to end on three final points. First, you may hear that this is a divisive issue within the technology ecosystem. In fact, it's not. The top 3 wireless carriers in the US -- Verizon, AT&T, T-Mobile -- and two of the tech industry's largest players, Google, and most recently, Apple have all invested in RCS in some fashion. This train is leaving the station. Second, I want to address the important issue of accessibility. As I spoke about before, SMS texting may be basic, but it gets the job done, and has for 30 years. Especially in communities where mobile service may not be as reliable, trust in a technology you know is going to work really matters. Now, you might hear that passing this bill will put Ohioans with less reliable service – in rural areas, for example -- at a disadvantage. That's wrong and a disservice to these users going forward. Here are the facts. As I said before, the train is leaving the station. Carriers are shutting down their 2G and 3G circuit switched networks to re-farm spectrum and provide better coverage for 4G and 5G data. As a consequence, rural communities will be better served since core voice and texting services will run over 4G and 5G. With this shift, RCS messaging will always be available where carrier voice and SMS is available. And, when a carrier network goes down neither SMS, voice or data services will work and no communication will be possible. Third, if you haven't already, you'll surely hear from technology companies that are opposed to this bill and that's their right. But, I would urge you to view this as a consumer safety issue, above all else. This bill would help address one of the biggest, and oldest, flaws in mobile tech.

You have an opportunity to lead the nation, and the world, in finally addressing it. Thank you for your time and attention.