>>MR. DOYLE: Good morning everybody. Welcome back for our second day. … Lou is in fact a former director of the National Geodetic Survey … So Lou, you need another minute or so? You good to go? Okay Lou Lapine, from South Carolina Geodetic Survey, the former director of the National Geodetic Survey.

>> MR. LAPINE: Good morning. The biggest constraint I ever had is that I can only speak for three minutes or five minutes even. My father once said if they asked me what time it was, I would begin by telling them how to build a watch. So bear with me on that.

They sprung this on me a few minutes ago and I think like Admiral Bossler, that's good because I put down a few of my initial thoughts which are probably the most important ones that I try to relate to you.

First of all, I want to thank Juliana and the National Geodetic Survey for even giving us the opportunity to voice our opinions. We are the users and we may have slightly different ideas on how this should all happen. So thank you Juliana. I'll talk to you about what I need later on.

At any rate, first of all, the National Geodetic Survey always and always will be a world leader in geodesy. There is no question about that and I'm not saying that just because I'm the director. All through college, every textbook I had, every photograph was courtesy of the Coast and Geodetic Survey so I have a reputation, a good reputation. If that means joining the rest of world with an international datum, that's what we have to do. There will be some pain in that but that's what we have do. And so when I go back to South Carolina, I'm going to start talking about what that change is going to be and what impact that has? The first impact is our local real time network will be more accurate. And that's good. And we will have to apply fewer corrections to make it accurate. That is good for me as an operator.

So, there is very positive things to come out of it. However, as a user, a daily user, I access NGS database five to ten days a day. I'm the director of the South Carolina Geodetic Survey. I'm not actively involved in the day-to-day survey and if I'm hitting your database that many time as day, should be an indication of how important it is.
I think somebody told me yesterday, 40 percent of the hits are on the IDB. And that is passive networks. And 40 percent is on the CORS. We use the CORS but mainly, we use one very small portion of it. We take the precise orbits and we use those to post process our national height modernization control network. And as you saw South Carolina, North Carolina, very dense, 6,000 miles, 3000 points just paid off in spades when it comes to operating a real time network. We were able to tune our network to that control. So a surveyor goes out and does not just one mark but visits a couple of marks. That means he knows the marks there are good and the network is performing unless you had some really weird combination of canceling errors there.
But getting back to the users, we really need some consistency in our coordinates.
90 percent of the states are located on a fixed crustal plate.
So even though I believe and encourage NGS to move forward with ITRF, we need a subset or a second set of coordinates that are earth-fixed and that can be accurately

transformed back to ITRF when we need them. And as ITRF coordinates change like you do right now, the transformation will change and we can always go back and forth between ITRF with crustal motion or without crustal motion. That is the one big thing I want to make a point of today. And also, I have to tell you, I'm going to get tarred and feathered as you heard yesterday but I just heard this morning, I'm going to get tarred and feathered a second time because I examined the change in the vertical from what we have on 88 to what we are going to and in South Carolina, that's going to mean reverting back to NAVD 29. And I tried for 12 years to get everybody on 88 and now, I'm going to have to start off, hey, you know, you should have stayed on 29 longer. It sort of made sense because the vertical datum of 29 was based on oceanography. And being a coastal state, we will be reverting back to in some essence oceanographic defined vertical datum. I murdered the geodesy on that but the point is made. So that is where we stand right now.

I think a piece of advice to NGS that has nothing to do with geodesy, you need to stop talking about horizontal and vertical. You need to talk about a datum that includes a gravimetric and geometric base. I think it is a little confusing. It is dated. We always did horizontal work or vertical work. Now, we are doing a 3 dimensional coordinate system data based on both gravimetric and geometric principles. That will make the message a little clearer to some.

One other thing as a piece of advice, I understand NGS is moving toward real time networks and I have to caution them a little bit, there is a whole lot of more work when you start going real time. You can tell your customers, well, we only guarantee it when we can guarantee it but it will sooner or later take over all your resources to try and keep a system like that running. Farmers will want it at 2:00 a.m. and you can't give it to them and you will say, that's not our responsibility. It will be your responsibility if they dispel are depending on them. So if you got the resources, go ahead. If you need to concentrate on what you do best at least for the time being and then venture on in that new technology. That is based on my personal experience We set it up to run 6:00 a.m. to 8:00 p.m., running it 24/7, 365 and we have to because our customers now expect it.

One last thing: I wanted to dispel the rumor about Lou Lapine retiring. Lou will be retired by the time this new data comes around. But I will work my hardest in the south, in the southeast and I know Dave will be with me. We will work our hardest to convince people that this is the right thing to do. So good luck and I might not be here but I'm always here in spirit. So thank you very much.