Case study | China
Featured field service engineers:
Xiaojun Liu, Yougang Hu, Hailong Feng, and Binbin Zhu

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Services and support

A Thermo Fisher Scientific FSE team helped a key account set up gold-standard COVID-19 testing for the Winter Olympics

When the leading independent testing laboratory in China undertook an important security project—providing COVID-19 testing for the Olympic Village at the 2022 Winter Games in Beijing—it faced an unprecedented challenge: protect the athletes and staff from a major outbreak by testing approximately 30,000 samples each day in highly limited lab space. The diagnostics company chose to perform the testing using reliable PCR technology, turning to Thermo Fisher to install 33 Applied Biosystems™ QuantStudio™ systems in on-site stationary and mobile labs, since these powerful PCR instruments are compact, robust, and offer excellent remote connectivity capabilities.

A Thermo Fisher field service engineer (FSE) support team was immediately organized to help accomplish the installation and calibration of all 33 instruments in a single day. The stakes were high, the time expectation was demanding, and the working conditions were difficult, but through approximately 15 hours of intensive work, the team completed the installation and got all the instruments up and running properly. Thanks in part to the efforts of this support team, COVID-19 testing for the games ran smoothly—with an achieved goal of 30,000 test reactions per day—and was widely hailed as a phenomenal success.

For their Olympian effort, the FSEs comprising the team—Xiaojun Liu, Yougang Hu, Hailong Feng, and Binbin Zhu—have been honored with the Thermo Fisher Global Support Services Guardians of Your Science award. We were fortunate to connect with these four hardworking FSEs and talk to them about this unique project and learn more about what makes them true guardians of your science.

Binbin Zhu, Field Service Engineer, Thermo Fisher

Can you tell us how your team accomplished this impressive installation?

Binbin Zhu: A large diagnostics company had purchased two mobile detection vehicles and constructed a capsule lab for the project, in which they planned to install 33 QuantStudio 5 systems. A few instruments would be installed in the mobile detection vehicles and the rest of them located in the capsule lab. The installation was very urgent, so we knew we would have to divide the tasks among our team members. Yougang Hu was our lead engineer on the project; he was also responsible for direct communication with the customer. Hailong Feng was responsible for coordinating our efforts with other regions during the installation—that's because in order to acquire such a huge amount of instruments so quickly, we had to bring them in from regions from all over the country. Xiaojun Liu was responsible for the preparation of the service tools needed for the installation. My responsibility was to oversee the logistics, tracking, and follow-up on these service tools as well as reagents. So that's how we divided the work and cooperated with each other.

Hailong Feng, Field Service Engineer, Thermo Fisher

Was this the only testing site for the games? Who had access to it?

Binbin Zhu: Yes, this was the only site. The testing trailers as well as the capsule lab targeted only those in the Olympic Village: the athletes and the staff working there. It was not open to the public.

Was your team there for just the installation or after the installation as well?

Yougang Hu: The policy for the winter Olympic Village was closed-loop management, so for people outside the village, access was extremely limited. Therefore, our FSEs only had one day to fulfill all the work for the installation. After completing the installation, we had to leave the village right away. So after that, if there were any problems during the use of the instruments, we would use Thermo Fisher remote support tools and connect virtually with the testing staff.

Yougang Hu, Field Service Engineer, Thermo Fisher

What were the challenges of doing such a large number of instruments in such a short amount of time?

Yougang Hu: There were three main challenges we faced during the work. The first one was that the working conditions in the lab were very poor. The village environment was still under construction, so only the lab personnel and our team were even allowed into the area.

Another challenge was that the capsule lab spaces were very narrow. We had to carefully rope off other instruments as we performed the installation. It took us three hours just to bring all 33 of the QuantStudio systems into the lab and trailers. We had to move them one by one into the detection lab and onto the benches.

And the other challenge was that it was very cold at that time; it was the coldest season in Beijing, and the temperature was –15°C. At that low temperature, it was hard for our engineers to work as normal. So that was a poor and quite crude environment for this type of work.

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Xiaojun Liu: When we arrived at the lab, the difficulties facing us were beyond expectation. The construction work on the capsule lab itself wasn't finished, so the installation and calibration work had to be done with that construction incomplete.

And as Yougang mentioned, the extremely low temperature outside was a major difficulty. We had to warm up the instruments for a long time in order to reach the normal condition of 20°C for us to start the calibration work.

Another point about that is that although the temperature inside the lab was about 20 degrees, outside it was still below 15 degrees and freezing cold, and we had to have lunch out there. The rice would get so cold. It was difficult for us.

What was involved in the installation process itself?

Xiaojun Liu: We had to configure the power supply and lay out power lines for the instruments. There was no working power supply yet, so we had to use mobile power for electricity in the capsule lab. Then there were the hours of moving, carrying, and shelving the instruments. Then there was bringing the labs up to temperature and running the instrument self-tests and calibrations. It can take up to several hours to perform these tasks on each instrument, particularly if there is any contamination cleanup needed. Fortunately, we were able to run some calibrations simultaneously.

Completion of the installation required about 15 hours of high-intensity work, and at last all the instruments worked normally as expected. When we left the capsule laboratory, it was late in the night.

Xiaojun Liu, Field Service Engineer, Thermo Fisher

How did you feel when it was finished? Were you tired?

Yougang Hu: Yes, after 15 hours, definitely. But very proud to be involved in such a task: supporting customers with Thermo Fisher products, being involved in COVID-19 testing. We are honored we could help our customers create a safer environment for the event. We are also grateful to all the people involved and leadership for their help in doing this work, their understanding and arrangements.

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Xiaojun Liu: Although it looked difficult at first, once we got involved in the program, we really felt happy that we could help the customers with our products through this project. We hope to have a similar opportunity in the future.

We hope so too, but next time hopefully without facing a global pandemic and cold lunch. Congratulations to the team for going above and beyond and to be honored with the Guardians of Your Science award.

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