

China completes tests of quantum communication network



Command center of Jinan quantum communication network [Photo/Ta Kung Pao]

Quantum communication network, which boasts ultra-safe connection impenetrable to hackers, is expected to be put into commercial use in a Chinese city by the end of next month.

Jinan Institute of Quantum Technology announced Sunday that the network, connecting Communist Party and government bodies in Jinan, capital of East China's Shandong Province, had lately been tested and the designers were satisfied with its performance, especially in secured communications.

Liu Hong, a professor with Shandong University who was involved in the test, said the network has proved to be in a "very ideal" condition.

In the test, which involved over 50 programs, the network transmitted data with quantum encryption keys among nearly 200 terminals in the city. Between users, more than 4,000 keys were generated in just a second, said Zhou Fei, an assistant director of the institute.

Quantum communication uses quantum entanglement of photons to make sure that nobody taps into the line, for doing so would inevitably corrupt the signal.

In quantum communication, any interference is detectable. Two parties can exchange secret messages by sharing an encryption key encoded in the properties of entangled particles.

Zhou said the success of the test is a landmark in the development of quantum communication technology worldwide, paving the way for its commercial use first in government and then in finance, energy and other sectors.

Doorstop – Paris, France

PRIME MINISTER:

I want to thank again on behalf of myself and Lucy, President Macron and his wife Brigitte for their extraordinary warmth and hospitality and friendship they showed us yesterday and last night at the Élysée Palace.

It really was a great opportunity to spend a lot of time with the President and his wife and to discuss his agenda. He is of course the youngest President of the French Republic. He's come through the centre of politics. You could say he stands in the sensible centre of French politics and has won a remarkable victory, both in the Presidential election and of course in the parliamentary elections just concluded.

It was great to have a very extended opportunity to talk with him on the plane. He gave us a lift as you know from Hamburg to Paris and then last night at the Élysée Palace.

I'd say the relationship between France and Australia has never been stronger and of course we'll be going down to Cherbourg in a moment to officially open the Future Submarine Project office where the design work is underway for our regionally superior submarines that we're building with the French based on their latest submarine.

This is a massive national enterprise, a multi-generational project that is going to knit the relationship between France and Australia together even more closely. And of course as the President noted last night, I thought in a very gracious and touching way, we're doing all of this 100 years on from when Australian Diggers and French Poileau were fighting side-by-side to keep France free in the trenches of the First World War.

JOURNALIST:

Prime Minister, how confident are you that jobs or work can start on the submarines in 2022?

PRIME MINISTER:

I was just actually speaking to one of my officials a moment ago and that is precisely the date, that 2021-2022 is when they expect construction to be able to begin.

JOURNALIST:

How many jobs would there be at that point do you think?

PRIME MINISTER:

There will be thousands of jobs associated with the project. It is a massive project as you know. And of course it's at the cutting edge of technology and this is one of the important things – it is not just a matter of acquiring the defence capabilities and naval capabilities that we need to defend Australia. It's also at the most advanced level of manufacturing, of design and manufacturing and that has enormous spillover benefits for the rest of Australian industry.

So it is a job creator in terms of the project but this is a great national enterprise which will have big spill-over benefits across the economy.

JOURNALIST:

Is the plan still to have every one of the submarines built in South Australia? And is there a danger in doing that about capability gaps?

PRIME MINISTER:

No, the plan is to build, the commitment is to build them all in Australia. This is a part of my commitment to ensure that Australia has a sovereign defence industry, a sovereign naval shipbuilding industry. Of course it goes beyond submarines, as you know. But this is a key part of the economic security that my government is building for Australians now and for generations to come.

JOURNALIST:

Just reflecting on the G20 – the conclusion of the Summit has failed to reach consensus on North Korea and on climate. Are you concerned that issues of such consequence, there hasn't been global leadership shown by the G20?

PRIME MINISTER:

Dealing with climate, I spent some time shortly before the G20 concluded, in fact with President Macron and President Trump ensuring that we had a consensus on the language in the communique and Prime Minister Theresa May was with us as well. There was quite a lot of work done by leaders to ensure that the language was agreed to and committed to. But of course the United States has decided to pull out of the Paris Agreement and that was recognised in the communique. But I think rather than focusing on the recognition of that decision by the United States which we regret, but nonetheless they've made that decision – it was well flagged in advance. President Trump campaigned on it. It was hardly a surprise. But apart from that I think there is considerable, consensus in agreement on the climate and energy issue.

As far as North Korea is concerned, the Chair of the G20 Chancellor Merkel made the point that the G20 has been historically largely an economic conference although of course we did secure a really historic statement about terrorism, counter-terrorism which again Australia played a leading role in

delivering.

In terms of North Korea, there is unanimous condemnation of the conduct of the North Korean regime but my sense was based on what the Chancellor said to us was that it was a little late to achieve a consensus among all the nations on a particular statement to go into the communique.

JOURNALIST:

Was that disappointing?

PRIME MINISTER:

I would have preferred to have seen a unanimous statement but it was not able to be achieved. But look, there is nobody, I just want to be very clear about this, nobody around that table was defending the North Koreans in terms of their conduct.

The Chinese of course as I've said before have the greatest leverage and hence the greatest responsibility are very forthright in their condemnation of North Korea's conduct and indeed supporting the sanctions that have been imposed by the Security Council.

JOURNALIST:

President Trump has left this Summit isolated on climate change, on trade and failing to help steer through some kind of strong statement on North Korea. How significant is it for the world and for Australia, and I guess for the global rules based order that the US power, so clearly is in decline at summits like this?

PRIME MINISTER:

You've just run through a summary of an editorial that you're composing.

Just speaking for myself I am there as the Prime Minister of Australia defending Australia's national interests. We wanted to get a strong statement on counter-terrorism. We wanted to get a strong statement about the rule of law applying in the digital world, in the cyber-space. We secured that.

We were able to join with other nations – I've mentioned Presidents Macron and Trump in particular – to ensure that we got consensus on the language on climate.

And look, generally I think it was a good outcome but plainly there are some differences of opinion around the table but you know, you can have a good conference and a good outcome without having complete unanimity on every point.

JOURNALIST:

Just on a domestic issue, a renewed push at home on same-sex marriage led by Dean Smith. Are you disappointed that this is happening despite your words

only a couple of weeks ago on this to try and calm this down?

PRIME MINISTER:

On that matter all I can say is that the Government's policy is very clear. We support a plebiscite where all Australians will be given a vote on the matter and that remains our policy. So, that's really all I can say about it.

It is critical that all Australians be given a say and the only reason they haven't been given that say is because of Bill Shorten playing politics with the issue.

JOURNALIST:

But are you urging Dean Smith to do this? Are you urging him to not do this or are you staying out of it?

PRIME MINISTER:

Well our policy is very clear. If Members want to raise – I mean Dean crossed the floor against the plebiscite bill in the Senate, you know, so he's got a long standing view about it – but we, in our party, in our party room, Members are entitled to raise whatever issues they like.

JOURNALIST:

Prime Minister, can I just take you back to the United States – we understand that you can't necessarily criticise the President directly but can you tell us why you think it is important the United States be a global leader and be seen to be a global leader?

PRIME MINISTER:

The United States is a global leader. And it is plainly, I mean it is the largest economy, it is the number one super power. It provides global leadership and the President's presence there in Hamburg was demonstration of that.

But again, that doesn't mean that everybody has to agree on every single point. I think there is a remarkable amount of consensus that came out of the G20 statement and again, look at what we were able to achieve on terrorism, on the statement on counter-terrorism – how important it is for all of the nations around that table to speak with one voice and in particular to address the challenges in the cyber sphere which as one of the leaders I heard saying at the G20 it is an issue that has been talked about for many years but this is the first time that you've got very clear language and a very clear focus on what needs to be done and that's good. And I'm glad that Australia's been able to have a considerable influence in that.

JOURNALIST:

Prime Minister, there was a report that Christopher Pyne was meant to come to Cherbourg today and then was yanked after his same-sex marriage comment. Is

there any truth to that?

PRIME MINISTER:

I am quite capable of opening the project office myself I can assure you.

JOURNALIST:

You don't need Mr Pyne?

(Laughter)

JOURNALIST:

Prime Minister, Barnaby Joyce has said today that with President Trump you've got to separate what President Trump does, and what President Trump says. Do you agree?

PRIME MINISTER:

Again, I'm not here to commentate David. We have a very warm and constructive relationship with the Trump Administration both at a head of government level between myself and President Trump and with my ministers and officials. It is a very deep and engaged relationship and very constructive and effective. We spent a lot of time together at the G20 in which we covered a lot of issues – communique drafting issues, trade issues, discussed North Korea, discussed the Middle East – a whole range of issues. So it is a very good and constructive relationship and I want to thank President Trump for the opportunity to work through so many issues as we did at the G20.

JOURNALIST:

Prime Minister – what is your agenda for London?

PRIME MINISTER:

It will be largely focused on national security. We'll be meeting obviously with Prime Minister May and with other ministers and also with security agencies while we are there.

JOURNALIST:

How was dinner last night? What did you have?

PRIME MINISTER:

Look, it was a magnificent dinner. It was, really, I just want to conclude on this point – you know, yesterday and last night was an opportunity for me to get to know President Macron very early in his term and we had the most broad-ranging discussions.

As you can see he is a remarkable leader of a remarkable nation and one whose destiny has been interlinked with Australia for well over a century as we discussed last night.

I think there was a very very valuable opportunity to get to know each other and understand his agenda, his reform agenda and his view of the world and the challenges that we face.

And I might say, I know that you're talking about climate, just in terms of practical matters – I had very good discussions with a number of leaders about what we're doing in the energy sphere and a lot of interest in what we're doing on storage. There is a growing recognition around the world that as your quantity of renewable energy grows, variable renewable energy grows you've got to provide the storage and the backup to support it. And so a lot of interest in Snowy Hydro 2.0 and what we're doing and I think you will see a lot of investment in pumped hydro around the world to support that renewable energy that is growing everywhere.

JOURNALIST:

Have you invited him to visit Australia?

PRIME MINISTER:

I have, I certainly have and we look forward to doing so at some point the future. I think he would be enthusiastically received. I have no doubt he would be enthusiastically received.

JOURNALIST:

Can you tell us anything about the Disraeli speech that you're going to give?

PRIME MINISTER:

I'll be talking about freedom in the context of national security. That will be main theme of the speech.

Okay thank you all very much. See you in Cherbourg.

[ENDS]

Press Statement – Élysée Palace, Paris

PRIME MINISTER:

The Australian diggers fought 100 years ago, near the place of your birth and Brigitte's, Amiens, to defend France's liberty. My Grandfather was among them and I remember as a little boy his stories of the trenches, those grim times when he and thousands of other Australians fought and so many died to keep France free. 100 years ago.

That sacrifice is remembered and it's honoured by the people of France as it

is by the people of Australia. It is a great piece of our history.

Our destinies are interlinked and now a century on the brave men and women of our defence forces are serving together again in freedom's cause to defend our nations from the threat of terrorism both in the Middle East and at home.

And the cooperation we have as you described Mr President in terms of intelligence becomes closer and closer all the time.

So it is a very tight bond and it is recognized that the Future Submarine Project, the project office of which I'll be opening tomorrow in Cherbourg represents the latest development in this remarkable story of partnership.

This is the largest and most ambitious military project in Australia's history and it is a matter of great moment, historical moment that 100 years on from those shared sacrifices from that alliance, from that courage, from that dedication, from those days when men from Australia came to the other end of the world to fight for freedom – their, we are their grandchildren, their great grandchildren, are working together to secure our freedom not just for today but for many, many years to come.

The Future Submarine Project is a generational, a multi-generational project. It is a national enterprise. And it is one where we working together, our two nations side-by-side as our forebears did so long ago.

Mr President, we spoke about the G20 and of course, only a few hours ago we were finalising with other leaders the communique and ensuring that we were able to produce a document that had the endorsement of all of the nations and leaders around the table. And we worked closely together with other leaders. It was a very productive discussion. And the values that you described are ones that are held dear by Australians – a commitment to the rules based international order, a commitment to free trade and open markets, a commitment to those values that have enabled us to deliver for our part in Australia 26 years of continuous economic growth.

We talked in Hamburg and resolved agreement on the battle against terrorism. We, as the nations of the G20 for the first time reached agreement with a clear vision on how we must tackle the spread of terrorism across the internet. How this extraordinary piece of infrastructure, the most remarkable ever devised in terms of its transformation of the lives of billions of people, how we can ensure that it is not an ungoverned space and that the rule of law will prevail online just as it must and does offline.

I want to thank you too for the commitment to our strategic partnership. We continue to enhance that cooperation. You spoke of the French firms that are doing business in Australia and of course, many Australian companies are doing business in France and our respective ambassadors are doing an outstanding job in advancing the continued cooperation between France and Australia.

I want to thank you too, Mr President, for the support that you have given and France has given to advancing Australia's negotiations to have a free

trade agreement with the European Union.

We met with Mr Tusk and Mr Juncker today and our commitment and theirs, I believe, is to do everything we can to ensure that we can get that free trade agreement negotiated over the next 18 months. We would like to get it agreed by 2019. That is a realistic but ambitious objective.

I want to finally say, Mr President, the discussions that we've had, both in Hamburg and on the way from Hamburg here to Paris, have indicated, demonstrated how what a remarkable intellect you bring to the leadership of France at this time. You are the youngest President in the history of the Republic but you bring with that, Sir, an intellect and an experience and a vision and an ability to dream far beyond the challenges of today, the daily challenges you mentioned at the end of your address.

Congratulations Mr President on your election.

We look forward to working with you for many years to come.

We have shared values, shared challenges and we'll tackle them together with the same commitment, the same courage that our grandparents and great-grandparents did all those years ago when France's liberty was at stake and Australians and Frenchmen and women stood side-by-side to keep this Republic free.

Thank you Mr President for your generous hospitality.

[ENDS]

Transcript – Morning Doorstop – Hamburg, Germany

PRIME MINISTER: Good morning. As you know last night, the G20 leaders have agreed for the first time very clearly that the rule of law must prevail online as well as offline.

In the lead up to this summit, as you know, I've been talking to other leaders about the importance of ensuring that the internet is not used as a vehicle for spreading terrorist propaganda and recruiting people to the Islamist cause. But also that the encryption basis of the internet's messaging and communications platforms are not used as a means of enabling terrorists to hide in the dark where the law cannot reach them.

And so obviously as you know, this is a complicated issue and contentious in some respects. But it's good to see that as a result of the arguments that we've placed and the unanimity that we've built up with other leaders and

other nations, that you've seen strong language that now enables us to go forward and say to the tech companies, say to Silicon Valley and its emulators, 'you've got to work with us to solve this problem. We cannot allow the internet to be an ungoverned space'.

And so you see that in paragraph 20 of the statement on counterterrorism, it's very strong language and I'm very pleased that Australia's been able to play such a leading and influential role in ensuring that we get that, bringing together with one mind, standing together to defeat terrorism.

JOURNALIST: Prime Minister what's your understanding of the language on climate, its understood that it will allow for fossil fuels and technology around fossil fuels to be advised to G20 members, is that your understanding?

PRIME MINISTER: Well I won't comment on the language until it's published. But fossil fuels are going to be part of the energy mix of the world for a very long time, nobody disputes that.

The object of climate policy is to reduce net emissions; it's not to eliminate the burning of all fossil fuels. It's an obligation to reduce your emissions overall.

Can I say though – thank you for raising climate – because one of the matters I discussed with other leaders yesterday and had some very productive discussions, both in the plenary and in the various discussions around it, was about the importance of storage and the significance of our Snowy Hydro 2.0. There is a lot of interest in that, and the scale of it and the importance of pumped hydro as a means of storing huge amounts of electricity.

I mean just to give you an example the battery that has been announced for South Australia, which we welcome by the way, it's late, storage was obviously required in South Australia a long time ago, but I'm pleased to see that it's making that commitment. But that will store about 120 megawatt hours of power, Snowy Hydro 2.0 will store 350,000 megawatt hours, so it gives you an indication of the difference in the scale.

But storage is clearly a very very big part of it, and there is a lot of interest in what we've done. In fact I've shown the drawings of Snowy Hydro 2.0 on my iPad to quite a few people here who are very interested in it.

JOURNALIST: Just on the South Australian battery, do you congratulate Jay Weatherill on this, do you encourage other states to go down this path?

PRIME MINISTER: Well look yes I'm certainly pleased that he's made the commitment to do it.

I gave a speech as you may remember in February talking about the importance of storage, plainly that was the big factor that was overlooked again, and I've said this at the G20 here.

Energy policy in Australia – national energy policy – is guided under my leadership by engineering and economics, not by ideology and politics, they're a very poor guide. And South Australia of course has suffered from

the very ideological approach to power where they allowed a lot of wind power to be built without taking into account that the wind doesn't blow all the time and backing it up.

JOURNALIST: What do you think of banning all petrol and diesel cars, France has set a date by 2040.

PRIME MINISTER: I've read about that, I'll be interested to see if it's achievable. But again, the object has got to be a policy based on engineering and economics and in terms of emissions reductions talking about net reductions in emissions. So that doesn't mean not burning fossil fuels, I can assure you.

JOURNALIST: Prime Minister have you spoken to President Xi?

PRIME MINISTER: Yeah I have spoken to President Xi, yes. I had a good discussion with him since we last met, last night about North Korea and repeated my very grave concerns about the situation there, and why I believe that China has a particular responsibility given the considerable leverage it has.

I've also discussed North Korea as you know, further with the Japanese Prime Minister, Shinzo Abe, and of course with President Trump, who I spent some more time with last night.

JOURNALIST: And what was his response to your concerns? Are you worried that this request is falling on deaf ears?

PRIME MINISTER: No it's not falling on deaf ears. I won't go into the – I'm happy to say what I said but I won't go into what President Xi said. But I think you can assume that the Chinese position is that the situation is not as straightforward as others assert and that their influence over North Korea is not as great as others assert.

But the fact is, I mean again, I'll repeat what I've said before. We all know North Korea is not a compliant client state like East Germany was to the old Soviet Union. We all understand that. But the fact is, the truth is that China has overwhelming leverage over North Korea. It has the ability to, if it were to impose the economic sanctions thoroughly and greater sanctions, it would be able to put the economic lock on North Korea and that is one way that that regime could be brought to its senses without conflict.

But it is a very grave problem on the Korean Peninsula and China has to step up and take more responsibility.

JOURNALIST: Prime Minister you're off to Paris, can you tell us what your hopes are for that meeting?

PRIME MINISTER: Yes well again we've had some very good discussions with the new President of France, Emmanuel Macron and indeed with his wife Brigitte already. The focus will obviously be, all the issues we will be discussing here; trade, counterterrorism, but of course the big defence deal we have with France. The partnership that we've entered into to build the future

submarines and that will be a major topic of the discussion.

JOURNALIST: Prime Minister how significant do you judge the developments between the Russia or US President's meetings to be, particularly the fact they manage to dodge the common ground on the ceasefire, at least in part in Syria.

PRIME MINISTER: Well I think it is significant, but how significant only time will tell. But again I had the opportunity to have a good review of both the North Korea situation and the progress of discussions with President Putin when I met with President Trump last night.

Look it is a fiendishly complex situation in Syria as everyone here understands. But it will require very intense collaboration between Russia, the United States and indeed the other players in that field who are including of course Turkey, who's President is also here.

JOURNALIST: PM with the meeting with Mr Trump in the car-

PRIME MINISTER: Yeah – in the beast.

JOURNALIST: What was it like?

PRIME MINISTER: I felt very safe. (Laughter)

JOURNALIST: I understand you're meeting with President Moon today as well, did you make it or was it apparent to Mr Trump that you're now in lock step with the US on the North Korean situation and is that a point you will be making today with President Moon?

PRIME MINISTER: Just ask that question-

JOURNALIST: Is it the case we're now in lockstep with the US over the Korean situation and is that a point you will be making to President Moon today?

PRIME MINISTER: Yes, my position, Australia's position on the North Korean situation is the same as that of the United States. Which is that the reckless conduct – illegal conduct in fact – must stop and that this escalation is continuing to threaten world peace.

JOURNALIST: But what's President Trump going to do about it?

PRIME MINISTER: Well again, this is a developing situation and I'll let you address that question to him.

But clearly everybody wants this matter to resolved in a peaceful and diplomatic way, and I think you will see clearly an increase in sanctions. But the country with the ability to impose the most severe sanctions and hence the greatest influence on North Korea is obviously China.

JOURNALIST: Can you tell us more about the ride in the beast?

PRIME MINISTER: Well, the ride in the beast, this is the President's special

car.

Well no look, it was very kind of him, we went from a reception to the concert theatre and he and Melania invited Lucy and I to ride with him in the car and it was the opportunity to have a good private discussion about a number of these issues. So look we get on very well, so that's-

JOURNALIST: And what were those number of issues other than North Korea that were discussed with Trump?

PRIME MINISTER: Really we talked about a number of things including some old mutual friends. So look, President Trump and I get on very well, which is good, I think as is apparent. One more and then I'd better run.

JOURNALIST: Prime Minister, President Macron has a strong economic reform agenda, he wants to overhaul labour laws in France because of the really stubborn unemployment rate there.

PRIME MINISTER: Sure.

JOURNALIST: Is workplace law reform something that you can take some advice from other leaders do you think to bring to back to Australia?

PRIME MINISTER: Well I think a lot of people, the French would love to have workplace laws that were approaching ours, France's workplace laws are very very inflexible and one of the reasons why they've had such stubbornly high unemployment.

One of the other things that President Macron is seeking to do is to reduce company tax, so I'm sure we'll discuss the progress we've had. I mean my government has reduced company tax for companies up to \$50 million in turnover as you know, their tax rate is coming down and has in fact up to \$25 million it already has come down, and will come down further. So that's very important part of our economic agenda which is to encourage more investment and hence more employment and Macron-

JOURNALIST: So they can take some advice from Australia, France

PRIME MINISTER: Well it's not a question of taking advice but you know we all learn from others' experience. And the truth is that around the world countries are seeking to reduce business tax because they know if you reduce business tax you increase investment, if you increase investment you increase employment.

Everything, every element of my Government's policy is focused on giving Australians the security they need. We talked about national security a lot this morning and also energy security, but also to provide the economic opportunities they need. And a big part of that is providing incentives for business to invest because if they invest more, they grow more and they employ more and they export more.

So you know whether it is talking about tax reform, whether it's talking about energy security, whether it's talking with President Jokowi yesterday

about, you know enhancing the free trade relationship with Indonesia to create more opportunities for Indonesians and Australians to do business together, this is all part of what I'm doing here, defending and advancing Australia's national interest.

Thanks very much.

[News story: Defence Secretary welcomes Iraqi Victory in Mosul](#)

Updated: update

Welcoming Prime Minister Abadi's statement on Mosul, Defence Secretary Sir Michael Fallon said:

I congratulate Prime Minister Abadi, and the Iraqi forces who have been fighting on the ground with great bravery and care against a brutal opponent. Daesh has total disregard for innocent civilian life and we should welcome their defeat in a city that was ground zero for their so-called caliphate.

Britain has played a leading role in the Coalition that has helped bring about the removal of the death cult from Mosul. The RAF has struck more than 750 targets as part of the campaign to liberate Mosul – second only to the United States. While these pin point strikes have brought an end to Daesh in the city, there is still more to do. This barbaric group remains dug in west of the Euphrates and clearing operations in and around Mosul will be needed because of the threat from improvised explosive devices.