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SOUTHERN DISTRICT OF CALIFORNIA
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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA

November 2019 Grand Jury

UNITED STATES OF AMERICA,
Plaintiff,

v.

DING XIAOYANG (丁晓阳) (1),
aka Ding Hao,
aka Manager Chen,
CHENG QINGMIN (程庆民) (2),
aka Manager Cheng,
ZHU YUNMIN (朱允敏) (3),
aka Zhu Rong,
WU SHURONG (吴淑荣) (4),
aka goodperson,
aka ha0r3n,
aka Shi Lei,
Defendants.

Case No. '21 CR1622 GPC

INDICTMENT

Title 18, U.S.C., Secs. 371, 1030(a)(2)(B) and (C), 1030(c)(2)(B)(i) and (iii), 1030(a)(5)(A), and 1030(c)(4)(B)(i) - Conspiracy to Damage Protected Computers; Title 18, U.S.C., Sec. 1831(5) - Conspiracy to Commit Economic Espionage; Title 18, U.S.C., Sec. 982(a)(1) and (b)(1) - Criminal Forfeiture

1 The grand jury charges:

2 Count 1

3 At various times relevant to this indictment:

4 INTRODUCTION

5 1. The Hainan Province Ministry of State Security (“HSSD”) was a provincial
6 foreign intelligence arm of the People Republic of China’s (“PRC” or “China”) Ministry of
7 State Security (“MSS”). The MSS, and by extension the HSSD, was primarily responsible
8 for domestic counterintelligence, non-military foreign intelligence, and aspects of political
9 and domestic security.

10 2. Hainan was China’s southernmost province and included Hainan Island, which
11 was located in the South China Sea near Cambodia, Vietnam, Malaysia, and the Philippines,
12 and home to the Yulin Naval Base.

13 3. In 2011, the HSSD created a front company, Hainan Xiandun Technology
14 Development Co., Ltd. (“海南仙盾”) (“Hainan Xiandun”), which held itself out publically
15 as “a fast-growing high-tech information security company ... located in Haikou City,
16 Hainan Province,” providing “big data security, security situational awareness, and security
17 technology research ... committed to exploring the development trend of cutting-edge
18 science and technology.”

19 4. From 2011 through at least 2018, a time period that in part post-dates the
20 September 2015 commitment by China’s President that the PRC government would not
21 conduct or knowingly support cyber-enabled theft of intellectual property, including trade
22 secrets or other confidential business information, with the intent of providing competitive
23 advantages to PRC companies or commercial sectors, Hainan Xiandun employed hackers
24 who sought to and did steal such data from companies and universities involved in virus
25 and vaccine research of the Ebola virus and maritime research and development. Such trade
26 secrets and confidential business included sensitive technologies used for submersibles and
27 autonomous vehicles, specialty chemical formulas, and proprietary genetic-sequencing
28 technology. Much of the stolen data would, among other things, provide a commercial and

1 strategic advantage to the PRC government, state-owned companies, and commercial
2 sectors. Hainan Xiandun employed hackers also sought to and did steal data from U.S. and
3 foreign government entities, in some instances for use to support the PRC's efforts to secure
4 contracts for state-owned enterprises in the relevant countries. Security researchers tracked
5 these Hainan Xiandun intrusions using the threat labels "APT40," "BRONZE MOHAWK,"
6 "FEVERDREAM," "G0065," "Gadolinium," "GreenCrash," "Hellsing," "Kryptonite
7 Panda," "Leviathan," "MUDCARP," "Periscope," "Temp.Periscope," and "Temp.Jumper."

8 5. Hainan Xiandun employees, under the direction of HSSD intelligence officers,
9 hacked or attempted to hack dozens of victims in the United States, Austria, Cambodia,
10 Canada, Germany, Indonesia, Malaysia, Norway, Saudi Arabia, South Africa, Switzerland,
11 and the United Kingdom, as well as others.

12 6. HSSD intelligence officers, including defendants DING XIAOYANG,
13 CHENG QINGMIN, and ZHU YUNMIN, oversaw and directed the activities of Hainan
14 Xiandun linguists and computer hackers, including defendant WU SHURONG.

15 7. Members of the conspiracy, including defendants DING XIAOYANG,
16 CHENG QINGMIN, and ZHU YUNMIN, coordinated with staff and professors at various
17 universities in Hainan and elsewhere in China to support and manage Hainan Xiandun as a
18 front company for the HSSD, to identify and recruit talented computer hackers to penetrate
19 foreign entities (including foreign universities) and steal trade secrets, proprietary research
20 and data, and to identify and recruit talented linguists to interpret the stolen material.

21 8. The object of the conspiracy was to install malware and hacking tools on
22 protected computers and to leverage such malware and tools to commit unauthorized
23 computer intrusions, all with the goal of stealing information of value from foreign
24 governments, universities, and companies on behalf of the PRC and its instrumentalities,
25 including state-owned enterprises in the railway and shipbuilding industries, and PRC state-
26 sponsored and private sector biopharmaceutical and other companies.

27 //

28

1 9. Members of the conspiracy included, but were not limited to:

2 a. Defendant DING XIAOYANG, aka Ding Hao, aka Manager Chen, was
3 an MSS Intelligence Officer working in the HSSD, who has been recognized for his
4 leadership by the MSS while supervising, facilitating, and managing computer hackers and
5 linguists working at Hainan Xiandun for the benefit of the PRC and its state-owned and
6 sponsored instrumentalities;



14 b. Defendant CHENG QINGMIN, aka Manager Cheng, was an MSS
15 Intelligence Officer working in the HSSD, who supervised, facilitated, and managed
16 computer hackers and linguists working at multiple MSS front companies for the benefit of
17 the PRC and its various state-owned and sponsored instrumentalities;

18 c. Defendant ZHU YUNMIN, aka Zhu Rong, was an MSS Intelligence
19 Officer working in the HSSD, who supervised, facilitated, and coordinated computer
20 hackers working at Hainan Xiandun for the benefit of the PRC; and



1 d. Defendant WU SHURONG, aka goodperson, aka ha0r3n, aka Shi Lei,
2 was a computer hacker who, as part of his job duties at Hainan Xiandun, created malware,
3 hacked into computer systems operated by foreign governments, companies, and
4 universities, and supervised other employees involved in Hainan Xiandun's hacking
5 activities.



14 10. Members of the conspiracy hacked, and attempted to hack, into protected
15 computers, that is, computers used in and affecting interstate and foreign commerce and
16 communications, operated by the following government organizations, companies, and
17 universities, among others, to steal information, including proprietary research, trade secrets
18 or other confidential business information, and to use these institutions' computers to
19 facilitate further computer intrusions:

- 20 a. Research Facility A – a research facility in California and Florida involved in
21 the research and development of virus treatments and vaccines;
22 b. University A – a California university with a research institute involved in
23 maritime and hydroacoustic research and development as well as a school of
24 medicine;
25 c. University B – a Pennsylvania university with a robotics engineering program
26 involved in the research and development of autonomous vehicles and
27 maritime craft;
28

- 1 d. University C – a Hawaii university with an Applied Research Laboratory
- 2 involved in maritime research and development;
- 3 e. University D – a Pennsylvania university involved in maritime research and
- 4 development;
- 5 f. University E – a Maryland university with an Applied Physics Laboratory;
- 6 g. University F – a Texas university involved in maritime research and
- 7 development;
- 8 h. University G – a Washington university with an Applied Physics Laboratory
- 9 involved in maritime research and development;
- 10 i. Company A – a California information technology company;
- 11 j. Company B – a United States defense contractor headquartered in California,
- 12 which is involved in maritime research and development;
- 13 k. Company C – a mid-Atlantic company involved in the manufacture of aircraft
- 14 and marine craft;
- 15 l. Company D – a Swiss chemicals company, whose products include maritime
- 16 paints;
- 17 m. Company E – an aircraft servicing company headquartered in New Jersey with
- 18 repair and maintenance services at airports around the world;
- 19 n. Company F – an American airline;
- 20 o. Company G – a German industrial conglomerate with hundreds of subsidiaries
- 21 around the world;
- 22 p. Company H – a United States defense contractor headquartered in Virginia,
- 23 which is involved in maritime research and development.
- 24 q. A Cambodian government ministry (“Cambodian Government Ministry A”);
- 25 r. Two Saudi Arabian government ministries (“Saudi Arabian Government
- 26 Ministries A and B”);
- 27 s. A Malaysian high-speed rail corporation (“Malaysian Rail Corporation A”);
- 28 t. A Malaysian political party (“Malaysian Political Party A”); and

1 u. The National Institutes of Health (“NIH”).

2 11. From a date unknown, but no later than July 2009, up to and including
3 September 2018, within the Southern District of California, and elsewhere, defendants
4 DING XIAOYANG, aka Ding Hao, aka Manager Chen, CHENG QINGMIN, ZHU
5 YUNMIN, aka Zhu Rong, and WU SHURONG aka goodperson, aka ha0r3n, aka Shi Lei,
6 did knowingly and intentionally conspire with each other and other persons known and
7 unknown to the grand jury to commit an offense against the United States, that is, to:

- 8 a. intentionally access computers without authorization, and thereby obtain
9 information from at least one protected computer, such conduct having
10 involved an interstate and foreign communication, and the offense was
11 committed for purposes of commercial advantage and private financial gain
12 and information valued at greater than \$5,000, in violation of Title 18, United
13 States Code, Section 1030(a)(2)(B) and (C) and 1030(c)(2)(B)(i) and (iii); and
14 b. knowingly cause the transmission of a program, information, code, or
15 command, and as a result of such conduct, intentionally cause damage without
16 authorization to ten or more computers during any one-year period and loss to
17 one or more persons during any one-year period aggregating at least \$5,000 in
18 value, in violation of Title 18, United States Code, Sections 1030(a)(5)(A)
19 and 1030(c)(4)(B)(i).

20 MANNERS AND MEANS

21 12. Members of the conspiracy supported one another, and aided and abetted
22 computer hacking committed by each other, by providing monetary and other incentives,
23 shared computer hacking infrastructure, command and control servers, malware, platforms,
24 tactics, techniques, and procedures for successfully committing unauthorized computer
25 intrusions and stealing victim data.

26 13. Members of the conspiracy used multiple and evolving sets of sophisticated
27 malware, including publicly-available malware as well as malware uniquely created by the
28 conspirators, in order to obtain, expand, and maintain unauthorized access to protected

1 computers and related networks. Some of the malware employed by the conspirators
2 included those identified by security researchers as BADFLICK, aka GreenCrash; PHOTO,
3 aka Derusbi; MURKYTOP, aka mt.exe; and HOMEFRY, aka dp.dll. Such malware
4 allowed for initial and continued intrusions into victim systems, lateral movement within a
5 system, and theft of credentials, including passwords.

6 14. Members of the conspiracy sent fraudulent spear-phishing emails, which
7 appeared to originate from legitimate accounts with a legitimate or innocuous message, but
8 which actually attached malware that would damage and facilitate unauthorized access into
9 the recipient's computer system. The conspirators created online legends, such as fictitious
10 online profiles, for the spear-phishing email accounts in order to further buttress the
11 legitimate appearance of the emails. The conspirators also used doppelganger domain
12 names, which were created to mimic or resemble the domains of legitimate companies, with
13 the intent of tricking unwitting users into clicking on links, as well as hindering
14 identification of intrusions by victim entities.

15 15. Members of the conspiracy obtained, expanded, and maintained their
16 unauthorized access by stealing means of identification and access devices, including login
17 credentials, belonging to individuals who had administrative access to victim computer
18 systems. In addition, the conspirators used these hijacked credentials, and the access they
19 provided, to launch spear-phishing campaigns against other users of the same system or
20 other victim systems.

21 16. Members of the conspiracy registered and used malicious and deceptive web
22 domains to store malware until it was used on a particular system, to send spear-phishing
23 emails to intended victims, to store data stolen from victim systems, and as command and
24 control domains for the purpose of controlling malware.

25 17. Members of the conspiracy used GitHub to store both JavaScript beaconing
26 malware and stolen data. To conceal stolen data stored at GitHub accounts, members of the
27 conspiracy used steganography, which is the concealment of a file within another file,
28 message, video, or picture. Members of the conspiracy also used Application Programming

1 Interface (“API”) keys for Dropbox accounts in commands to upload stolen data directly to
2 Dropbox accounts controlled by the conspirators in order to make it appear that the activity
3 was a legitimate use of the Dropbox service.

4 18. Members of the conspiracy attempted to obscure their computer hacking
5 activities and theft of data through the use of Internet Protocol anonymizer services, such
6 as The Onion Router (“TOR”). To that end, the conspirators used these services to access
7 DERUSBI and other server-side malware, but also to access their malware infrastructure,
8 including domains and email accounts used in furtherance of their criminal activity. When
9 the private-sector cybersecurity community publicized Hainan Xiandun’s hacking efforts,
10 members of the conspiracy observed such efforts and sought to modify their tactics
11 accordingly.

12 19. Starting as early as 2011, members of the conspiracy coordinated with staff
13 and professors at a university in Hainan (“PRC University 1”) to help manage Hainan
14 Xiandun as a front company for the HSSD, to include using the address of PRC University
15 1’s library as an address for Hainan Xiandun; and work with Professor G.J., a computer
16 science professor at PRC University 1, to manage Hainan Xiandun, including the front
17 company’s payroll, employee benefits, and recruitment of computer hackers.

18 20. Despite efforts to conceal HSSD’s control over Hainan Xiandun’s computer
19 hacking and economic espionage activities, defendants DING XIAOYANG, CHENG
20 QINGMIN, and ZHU YUNMIN maintained and exercised managerial control over Hainan
21 Xiandun, including: (i) corporate formalities and documentation; (ii) payroll issues; (iii)
22 hacking training; (iv) paid vacations; (v) MSS performance awards; and (vi) malware
23 development and vulnerability evaluation for use against foreign governments, companies,
24 and universities

25 21. Members of the conspiracy also coordinated with staff and professors at PRC
26 University 1 and another College of Technology in Hainan (“PRC College 1”), to identify
27 and recruit talented computer hackers to penetrate foreign entities (including foreign
28 universities) and steal trade secrets, proprietary research, and data, and to identify and

1 recruit talented linguists to interpret the stolen material. Specifically, between 2012 and
2 2016, members of the conspiracy:

3 a. Coordinated, in part with Professor G.J. and Professor L.J., a computer
4 science professor at PRC College 1, on the recruitment of hackers from PRC University 1's
5 College of Software Technology and School of Information as well as PRC College 1, and
6 linguists from the School of Foreign Languages at PRC University 1;

7 b. Surreptitiously coordinated with PRC University 1 and Professor G.J. to
8 organize and sponsor hacking competitions with monetary prizes, with the goal of
9 identifying hackers for recruitment to Hainan Xiandun.

10 OVERT ACTS

11 22. In furtherance of the conspiracy and to effect the objects thereof, the following
12 overt acts, among others, were committed within the Southern District of California and
13 elsewhere:

14 (1) In or about 2009, defendant DING XIAOYANG joined the MSS, and
15 subsequently began working with the HSSD.

16 (2) In or about June 2009, defendant ZHU YUNMIN moved from Beijing
17 to Hainan province to join the HSSD.

18 (3) In or about July 2009, the HSSD established Hainan Kehua (“海南科华”)
19 as a front company to recruit computer hackers and linguists to target foreign
20 governments, companies, and universities on behalf of the PRC, similar to
21 Hainan Xiandun (“海南仙盾”).

22 (4) On or about July 8, 2010, defendant ZHU YUNMIN maintained a
23 collection of open source documents regarding leadership and funding for the
24 United States Centers for Disease Control and Prevention, some of which had
25 been translated into Chinese.

26 (5) From in or about 2010, through at least 2012, defendant CHENG
27 QINGMIN oversaw Hainan Kehua's recruitment of computer hackers,
28

1 including from PRC College 1, to engage in computer hacking on behalf of
2 the PRC.

3 (6) On or about October 17, 2010, defendant ZHU YUNMIN maintained a
4 collection of open source information related to the United States Department
5 of State's Biosecurity Engagement Program.

6 (7) On or about February 27, 2011, defendant ZHU YUNMIN sought the
7 assistance of a former university classmate in identifying hackers or people
8 who were good at network attacks, and provided salary and other benefits
9 available to those who would engage in such work on behalf of the PRC
10 government.

11 (8) In or about June 2011, the HSSD established Hainan Xiandun as a front
12 company to recruit computer hackers and linguists to target foreign
13 governments, companies, and universities on behalf of the PRC.

14 (9) In or about June 2011, members of the conspiracy listed the address for
15 Hainan Xiandun as that of PRC University 1's library and worked with
16 Professor G.J., a PRC University 1 computer science professor, to manage the
17 front company.

18 (10) On or about June 14, 2011, defendant DING XIAOYANG registered
19 DOMAIN 1, which was to be used as a call-back domain to facilitate computer
20 hacking of multiple entities, including Company A.

21 (11) On or about June 15, 2011, defendant DING XIAOYANG registered
22 DOMAIN 2, which was to be used as a call-back domain to facilitate computer
23 hacking of multiple entities, including University A, Research Facility A, and
24 NIH.

25 (12) On or about June 16, 2011, defendant DING XIAOYANG registered
26 DOMAIN 3, which was to be used as a call-back domain to facilitate computer
27 hacking of multiple entities, including University A and NIH.
28

1 (13) From in or about 2012, through at least 2017, defendant DING
2 XIAOYANG maintained contact with research institutes within a PRC state-
3 owned shipbuilding corporation, which are responsible for the design of
4 conventional and nuclear-powered submarines.

5 (14) On or about May 5, 2012, DING XIAOYANG, CHENG QINGMIN,
6 and others received malware from the MSS to be used against foreign victims.

7 (15) On or about May 10, 2012, members of the conspiracy compiled
8 Gh0stRAT malware, a remote access Trojan, which beacons to DOMAIN 2,
9 and was used to infiltrate a professor's network account at University A.

10 (16) On or about August 1, 2012, members of the conspiracy compiled
11 malware, which beacons to DOMAIN 3, and installed that malware on a
12 system operated by University A no later than November 5, 2012.

13 (17) On or about August 6, 2012, members of the conspiracy registered
14 DOMAIN 4, which was to be used as a call-back domain to facilitate computer
15 hacking of multiple entities, including University A, Research Facility A, and
16 NIH.

17 (18) On or about September 11, 2012, members of the conspiracy compiled
18 malware, which beacons to DOMAIN 2, and was installed on a system
19 operated by University A the following day.

20 (19) On or about September 11, 2012, members of the conspiracy compiled
21 malware, which beacons to DOMAIN 4, and was installed on a system
22 operated by University A's School of Medicine.

23 (20) On or about September 11, 2012, members of the conspiracy compiled
24 malware, which beacons to DOMAIN 2, to be used to infiltrate computer
25 systems operated by University A's center involved in hydroacoustic and
26 marine research, as well as Research Facility A's program that had begun
27 publicly highlighting its research aimed at a treatment and vaccine for Ebola.
28

1 (21) On or about November 1, 2012, members of the conspiracy installed
2 malware, which beacons to DOMAIN 2, on a system operated by Research
3 Facility A's program that had begun publicly highlighting its research aimed
4 at a treatment and vaccine for Ebola.

5 (22) In or about November 2012, defendant CHENG QINGMIN
6 coordinated with Professor L.J., a computer science professor at the PRC
7 College 1, to recruit individuals to work for a HSSD front company and
8 engage in computer hacking on behalf of the PRC Government.

9 (23) In or about January 2013, defendant CHENG QINGMIN oversaw
10 recruitment of computer hackers for Hainan Kehua.

11 (24) On or about January 8, 2013, members of the conspiracy installed
12 malware, which beacons to DOMAIN 4, on a system operated by Research
13 Facility A.

14 (25) On or about January 8, 2013, members of the conspiracy compiled
15 malware, which beacons to DOMAIN 1, and installed that malware on
16 systems operated by Company A the following day.

17 (26) On or before January 8, 2013, members of the conspiracy installed
18 malware on a system operated by NIH, which beacons to DOMAINS 4
19 and 5.

20 (27) On or before January 10, 2013, after infiltrating systems operated by
21 NIH, members of the conspiracy conducted multiple term searches on the
22 victim's network, which included "[Research Facility A]," the NIH Office of
23 Biodefense Research Affairs, and possible remote or VPN access to networks.

24 (28) In or about March 2013, through June 2013, defendant ZHU YUNMIN
25 engaged in the hiring and vetting process on behalf of Hainan Xiandun,
26 including the hiring of defendant WU SHURONG to engage in computer
27 hacking on behalf of the PRC.
28

1 (29) On or about March 7, 2013, defendant WU SHURONG applied to join
2 Hainan Xiandun, and was subsequently hired to engage in computer hacking.

3 (30) In or about May 2013, defendant CHENG QINGMIN oversaw
4 recruitment of computer hackers from PRC University 1's School of
5 Information for a HSSD front company engaged in computer hacking on
6 behalf of the PRC.

7 (31) On or about May 6, 2013, members of the conspiracy compiled PHOTO
8 malware, a remote access Trojan, accessible with the password "goodperson,"
9 and later installed that malware on a system operated by Company A.

10 (32) From on or about August 4, 2013, through August 28, 2013, members
11 of the conspiracy accessed malware installed at NIH utilizing an IP address
12 that was also utilized to control DOMAIN 4, which members also utilized as
13 a call-back domain for malware.

14 (33) From on or about September 12, 2013, and through September 16,
15 2013, members of the conspiracy surreptitiously coordinated with PRC
16 University 1 to sponsor and organize the preliminary rounds of a competition,
17 whose goal was to identify and recruit computer hackers to work on behalf of
18 the MSS.

19 (34) From on or about October 19, 2013, and through October 20, 2013,
20 members of the conspiracy surreptitiously coordinated with PRC University
21 1 to organize the final rounds and provide a monetary prize for the winner of
22 a competition, with the goal to identify and recruit computer hackers to work
23 on behalf of the MSS.

24 (35) From on or about January 1, 2014, through August 6, 2014, members
25 of the conspiracy accessed PHOTO malware with the password "goodperson"
26 on a system operated by Company A, downloaded and ran MURKYTOP, and
27 stole user passwords in order to gain further access to Company A's system.
28

1 (36) In or about February 2014, defendant DING XIAOYANG coordinated
2 with PRC University 1 Professor G.J. regarding employment benefits for
3 multiple Hainan Xiandun employees.

4 (37) On or about February 21, 2014, while at HSSD's headquarters
5 (depicted below), defendant DING XIAOYANG confirmed with PRC
6 University 1 Professor G.J. that payroll and social benefits were paid.



15
16 (38) From on or about February 8, 2014, through March 7, 2014, members
17 of the conspiracy accessed malware installed at NIH utilizing an IP address
18 that was also utilized to control DOMAIN 4, a call-back domain for malware
19 used during this same period.

20 (39) In or about March 2014, defendant DING XIAOYANG oversaw
21 recruitment of English linguists, including from PRC University 1's School
22 of Foreign Languages, to translate computer data and research stolen by
23 computer hackers at Hainan Xiandun.

24 (40) From on or about March 10, 2014, through April 4, 2014, members of
25 the conspiracy accessed malware installed at a NIH utilizing an IP address that
26 was also utilized to control DOMAIN 4, a call-back domain for malware used
27 during this same period.
28

1 (41) On or about April 17, 2014, members of the conspiracy installed
2 malware, which beacons to DOMAIN 4, on a system operated by Research
3 Facility A.

4 (42) From on or about May 5, 2014, through May 15, 2014, members of the
5 conspiracy accessed malware installed at NIH utilizing an IP address, to which
6 a subdomain of DOMAIN 4 resolved during this same period.

7 (43) From on or about July 6, 2014, through August 6, 2014, members of
8 the conspiracy utilized certain IP addresses to access PHOTO malware on a
9 network at Company A, which were also used to access and modify DOMAIN
10 4, a call-back domain utilized by the members of the conspiracy for malware
11 installed on networks at multiple victims, including University A, Research
12 Facility A, and NIH.

13 (44) On or about July 25, 2014, members of the conspiracy compiled and
14 installed malware, which beacons to DOMAIN 4, on a system operated by
15 Research Facility A, which was working on treatments and vaccines for
16 Ebola, which would have been of interest and benefit to multiple Chinese
17 biopharmaceutical companies working on the same topics.

18 (45) On or about December 29, 2014, members of the conspiracy sent spear
19 phishing emails to four University B employees associated with a robotics
20 engineering program in an attempt to breach its system.

21 (46) On or about January 8, 2015, through July 1, 2015, members of the
22 conspiracy sought further information about tularemia, Marburg vaccine,
23 Ebola, the U.S. national health security and HIV/AIDS strategies.

24 (47) On or about January 8, 2015, members of the conspiracy installed
25 MURKYTOP malware on a system operated by University B in order to
26 facilitate lateral movement within that network for the purpose of stealing
27 trade secrets related to autonomous vehicles.
28

1 (48) On or about February 21, 2015, members of the conspiracy installed
2 PHOTO malware on a system operated by Research Facility A.

3 (49) On or about March 25, 2015, members of the conspiracy compiled
4 BADFLICK malware, which beacons to DOMAIN 4 and was intended to be
5 used to infiltrate a system operated by Research Facility A.

6 (50) On or about April 20, 2015, members of the conspiracy compiled
7 BADFLICK malware, which was installed on a system operated by Company
8 B on August 5, 2016.

9 (51) On or about September 16, 2015, members of the conspiracy installed
10 malware on a system operated by University A's center involved in
11 hydroacoustic and marine research.

12 (52) On or about October 23, 2015, approximately one month after China's
13 President committed to the United States that its government would not
14 conduct or knowingly support cyber-enabled theft of intellectual property,
15 including trade secrets or other confidential business information, with the
16 intent of providing competitive advantages to the PRC's companies or
17 commercial sectors, members of the conspiracy installed PHOTO malware on
18 a system operated by Company E and later stole proprietary data related to
19 fire-suppression systems and other data.

20 (53) In or about November 2015, defendant CHENG QINGMIN oversaw
21 recruitment of computer hackers for a HSSD front company.

22 (54) From on or about December 9, 2015, through January 18, 2016,
23 members of the conspiracy accessed and read internal emails from University
24 B utilizing a web shell accessed by an IP address that was also used to register
25 EMAIL ACCOUNT 2 for a spear phishing campaign.

26 (55) From on or about December 21, 2015, through January 11, 2016,
27 members of the conspiracy used EMAIL ACCOUNT 2 to send spear phishing
28 emails with embedded malware to multiple defense contractors and

1 companies specializing in maritime research and development based in the
2 United States, United Kingdom, South Africa, and Austria.

3 (56) On or about April 11, 2016, members of the conspiracy sought further
4 information related to Ebola.

5 (57) From on or about July 19, 2016, through August 4, 2016, members of
6 the conspiracy utilized EMAIL ACCOUNT 3 to send spear phishing emails
7 with embedded malware to defense contractors and companies specializing in
8 maritime research and development based in the United States, United
9 Kingdom, and South Africa.

10 (58) On or about August 4, 2016, members of the conspiracy sent a spear
11 phishing email from EMAIL ACCOUNT 3 to Company B, which breached
12 its system and allowed the defendants to install MURKYTOP malware, a
13 lateral movement tool, and BADFLICK malware in the same network folder,
14 and the MURKYTOP malware was identical to that found on a system
15 operated by Company C.

16 (59) On or about August 16, 2016, members of the conspiracy installed
17 BADFLICK malware on a system operated by University B.

18 (60) From on or about August 30, 2016, through August 31, 2016, members
19 of the conspiracy sought further information regarding Company D and
20 "Dropbox appkey," which was a reference to Dropbox API keys.

21 (61) From on or about August 31, 2016, through November 17, 2016,
22 members of the conspiracy stole approximately 900 files of specialty chemical
23 formulas from Company D, copied them to a Dropbox account, and protected
24 the files with the password "goodperson."

25 (62) On or about September 2, 2016, on a system operated by Company E,
26 members of the conspiracy installed HOMEFRY malware, a password
27 dumper/cracker, which was identical to that subsequently publicized by a
28 cybersecurity company.

1 (63) On or about September 24, 2016, members of the conspiracy
2 surreptitiously coordinated with PRC University 1 to sponsor and organize the
3 preliminary round of a competition whose goal was to identify and recruit
4 computer hackers to work on behalf of the MSS.

5 (64) On or about September 28, 2016, members of the conspiracy copied
6 hundreds of internal documents and video files belonging to Company B to a
7 folder on its network in order to steal that data.

8 (65) On or about October 29, 2016, members of the conspiracy
9 surreptitiously coordinated with PRC University 1 to organize the final round
10 and provide a monetary prize for the winner of a competition whose goal was
11 to identify and recruit computer hackers to work on behalf of the MSS.

12 (66) On or about February 10, 2017, members of the conspiracy registered
13 EMAIL ACCOUNT 4, to be used for a spear phishing campaign against the
14 Governments of Cambodia and Saudi Arabia.

15 (67) In or before March 2017, members of the conspiracy utilized
16 BADFLICK malware to facilitate the installation of HOMEFRY and
17 MURKYTOP malware on a system operated by Company F.

18 (68) In or before March 2017, members of the conspiracy installed malware
19 on a server that managed Company F's computer system used for
20 communication between flight crews and ground operations in order to ensure
21 uninterrupted access to the airline's network.

22 (69) On or about March 28, 2017, members of the conspiracy installed
23 BADFLICK malware on a system operated by Research Facility A.

24 (70) On or about April 9, 2017, members of the conspiracy registered
25 DOMAIN 6, which was to be used as a call-back domain to facilitate computer
26 hacking of multiple entities, including University A, Company C, and
27 Cambodian Government Ministry A, as well as to store malware and stolen
28 data.

1 (71) On or about April 16, 2017, members of the conspiracy installed
2 malware on a system operated by University A's center involved in
3 hydroacoustic and marine research, which was identical to that stored at
4 DOMAIN 6.

5 (72) On or about April 19, 2017, members of the conspiracy registered
6 EMAIL ACCOUNT 5 to use for a spear phishing campaign against foreign
7 companies and universities.

8 (73) On or about May 12, 2017, members of the conspiracy installed
9 MURKYTOP malware on a system operated by University A's center
10 involved in hydroacoustic and marine research.

11 (74) On or about May 16, 2017, members of the conspiracy installed
12 BADFLICK malware on a system operated by Research Facility A.

13 (75) On or about June 8, 2017, members of the conspiracy utilized EMAIL
14 ACCOUNT 4 to send spear phishing emails with embedded malware to
15 Cambodian Government Ministry A.

16 (76) On or about June 13, 2017, members of the conspiracy created a
17 fraudulent LinkedIn account with the same name as EMAIL ACCOUNT 4,
18 where the purported account holder appeared to have been educated in Saudi
19 Arabia, in order to facilitate a spear phishing campaign against the
20 Government of Saudi Arabia.

21 (77) On or about June 12, 2017, and continuing through June 19, 2017,
22 members of the conspiracy utilized EMAIL ACCOUNT 4 to send spear
23 phishing emails containing malware to Saudi Arabian Government Ministries
24 A and B.

25 (78) On or about June 13, 2017, members of the conspiracy installed
26 BADFLICK malware on a system operated by Research Facility A.

27 (79) On or about June 17, 2017, members of the conspiracy installed
28 MURKYTOP malware, which was identical to that stored at DOMAIN 6 and

1 was subsequently publicized by a cybersecurity company, on a system
2 operated by Research Facility A.

3 (80) On or about June 21, 2017, members of the conspiracy installed
4 HOMEFRY malware on a system operated by University A's center involved
5 in hydroacoustic and marine research, which was identical to that
6 subsequently publicized by a cybersecurity company.

7 (81) On or about June 21, 2017, members of the conspiracy installed
8 MURKYTOP malware, which was identical to that stored at DOMAIN 6 and
9 was subsequently publicized by a cybersecurity company, on a system
10 operated by Research Facility A, and executed this malware the following
11 day.

12 (82) On or about June 21, 2017, members of the conspiracy stole proprietary
13 hydroacoustic research data from University A's center involved in
14 hydroacoustic and marine research utilizing malware installed on its system,
15 which was identical to malware stored at DOMAIN 6, and subsequently
16 publicized by a cybersecurity company.

17 (83) On or about July 3, 2017, members of the conspiracy utilized
18 BADFLICK malware to assist in executing MURKYTOP malware on a
19 system operated by Research Facility A.

20 (84) From on or about July 28, 2017, through August 2, 2017, members of
21 the conspiracy utilized two compromised email accounts at Company G to
22 send spear phishing emails to employees of multiple companies, including
23 Company H, which directed recipients to DOMAIN 7, a doppelganger domain
24 impersonating a legitimate Company G domain, that would result in malware
25 being installed on a recipient's computer.

26 (85) In or about August 2017, defendant CHENG QINGMIN exercised
27 managerial control over Hainan Xiandun, including overseeing training for
28

1 Hainan Xiandun technical employees at one of its offices on the 19th floor of
2 Chengtian Garden Building B pictured below.
3



14
15 (86) On or about August 31, 2017, members of the conspiracy installed two
16 pieces of malware on a system operated by University A's center involved in
17 hydroacoustic and marine research, which were identical to malware saved at
18 DOMAIN 6.

19 (87) On or about September 16, 2017, members of the conspiracy utilized
20 the compromised email account of University C's Director of Applied
21 Research Laboratory to send spear phishing emails to other employees at the
22 same institution, University D's Applied Research Laboratory, University E's
23 Applied Physics Laboratory, University F's Applied Research Laboratory,
24 and University G's Applied Physics Laboratory.

25 (88) On or about September 20, 2017, members of the conspiracy exfiltrated
26 stolen data from Company E, which included contact information for
27 individuals associated with the controlling authorities for two East-coast ports
28 as well as proprietary data related to fire-suppression systems.

1 (89) From on or about October 16, 2017, through October 24, 2017,
2 members of the conspiracy stored malware at DOMAIN 6, which was later
3 used to infiltrate University A's computer network, and subsequently
4 publicized by a cybersecurity company.

5 (90) On or about October 18, 2017, through December 8, 2017, members of
6 the conspiracy utilized EMAIL ACCOUNT 5 to send spear phishing emails
7 containing malware to foreign companies and universities, including
8 University G's Applied Physics Laboratory and University D's Applied
9 Research Laboratory.

10 (91) On or about October 20, 2017, members of the conspiracy installed
11 MURKYTOP malware on a system operated by Company C as well as an
12 additional piece of malware that was identical to that installed on a system
13 operated by Company B.

14 (92) On or about October 25, 2017, members of the conspiracy installed
15 MURKYTOP malware on a system operated by University A's center
16 involved with hydroacoustic and marine research, which was identical to the
17 same malware stored at DOMAIN 6.

18 (93) On or about October 25, 2017, members of the conspiracy installed
19 malware on a system operated by Company H, which was accessed with the
20 password "fuck[Company H]."

21 (94) On or about October 25, 2017, members of the conspiracy installed
22 malware on a system operated by Company C that beacons to DOMAIN 6,
23 a call-back domain used by the defendants to control malware.

24 (95) On or about November 3, 2017, members of the conspiracy installed
25 MURKYTOP malware on a system operated by Company E, which was
26 identical to malware installed on a system operated by Malaysian Political
27 Party A.
28

1 (96) On or about November 3, 2017, members of the conspiracy installed
2 PHOTO malware on a system operated by Company H, which was accessible
3 with the password “goodperson” and was identical to PHOTO malware
4 installed on a system operated by University A.

5 (97) On or about November 3, 2017, members of the conspiracy installed
6 BADFLICK malware on a system operated by Company H, which beacons
7 to an IP address utilized by DOMAIN 8 during this same time period.

8 (98) From on or about November 7, 2016, through December 7, 2017,
9 members of the conspiracy utilized EMAIL ACCOUNT 1 to send spear
10 phishing emails embedded with malware to a United States company
11 specializing in maritime research and development, an Indonesian
12 transportation company, University G’s Applied Physics Laboratory, and
13 Cambodian Government Ministry A.

14 (99) On or about November 20, 2017, members of the conspiracy utilized
15 malware to locate and exfiltrate proprietary research data and trade secrets
16 from a system operated by Company H pertaining to U.S. Navy submarine
17 systems development and submarine-launched intercontinental ballistic
18 missiles.

19 (100) On or about November 22, 2017, members of the conspiracy utilized
20 EMAIL ACCOUNT 6 to send spear phishing emails containing malware to
21 multiple United States defense contractors, and companies specializing in
22 maritime research and development as well as virus and vaccine research and
23 development.

24 (101) On or about December 5, 2017, members of the conspiracy stored
25 malware at DOMAIN 6, which was later used to infiltrate University A’s
26 computer network, and subsequently publicized by a cybersecurity company.

27 (102) On or about December 6, 2017, members of the conspiracy utilized
28 malware to steal data from a system operated by Malaysian Rail Corporation

1 A, from whom the China Railway Engineering Group was seeking a multi-
2 billion dollar contract to build a high-speed railway in Malaysia.

3 (103) On or about December 6, 2017, members of the conspiracy used the
4 email account of a University A professor, which had previously been
5 compromised, to send spear phishing emails containing malware to 32
6 recipients, including Company C.

7 (104) On or about December 6, 2017, members of the conspiracy utilized
8 EMAIL ACCOUNT 6 to send test spear phishing emails containing embedded
9 malware and the subject line: "Ocean Physical Story" to EMAIL
10 ACCOUNTS 1 and 5.

11 (105) On or about December 6, 2017, members of the conspiracy utilized
12 EMAIL ACCOUNT 6 to send spear phishing emails containing embedded
13 malware and the subject line: "Ocean Physical Story" to foreign companies
14 and universities, including University G's Applied Physics Laboratory and
15 University D's Applied Research Laboratory, and intrusion artifacts revealed
16 their specific interest in nanopore data used in virus research that University
17 G had exclusively licensed to a private company.

18 (106) From on or about December 6, 2017, through December 15, 2017,
19 members of the conspiracy used IP address anonymizing technology in an
20 attempt to conceal control of malware the defendants and their conspirators
21 had installed on a system belonging to University C.

22 (107) On or about November 3, 2017, members of the conspiracy installed
23 malware on a system operated by Company H, which beacons to
24 DOMAIN 8.

25 (108) On or about December 7, 2017, members of the conspiracy registered
26 EMAIL ACCOUNT 7 to send spear phishing emails to Company C and
27 University C.
28

1 (109) On or about December 7, 2017, members of the conspiracy registered
2 a Dropbox account to be used to store malware, facilitate intrusions into
3 foreign networks, and act as a depository for proprietary data and trade secrets
4 stolen from foreign companies and universities.

5 (110) On or about December 13, 2017, members of the conspiracy utilized
6 malware to steal data from a system operated by Malaysian Political Party A,
7 at a time when the party would have played a role in deciding a PRC state-
8 owned enterprise's bid on a railway contract in Malaysia.

9 (111) On or about December 15, 2017, members of the conspiracy installed
10 malware on a system operated by Company C.

11 (112) On or about December 28, 2017, members of the conspiracy installed
12 malware on a system operated by Company C that beacons to DOMAIN 8,
13 a call-back domain used by the defendants to also control malware on a system
14 operated by Company H.

15 (113) In or before January 2018, members of the conspiracy infiltrated the
16 network of Cambodian Government Ministry A and stole data pertaining to
17 discussions between the Governments of China and Cambodia over use of the
18 Mekong River.

19 (114) In or about January 2018, members of the conspiracy recruited
20 Cambodian linguists to translate stolen data stolen from the Cambodian
21 Government, which they protected with the password "goodperson" and
22 stored at DOMAIN 6, a call-back domain for malware used by the defendants.

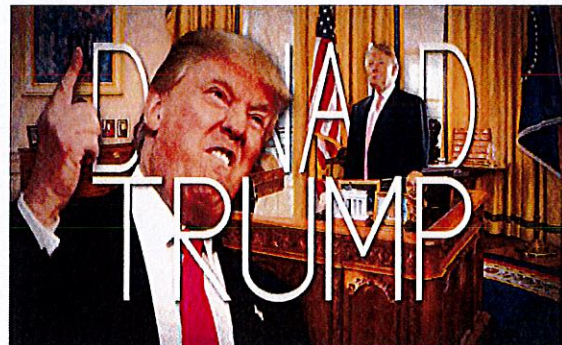
23 (115) On or about January 7, 2018, members of the conspiracy stored
24 malware at DOMAIN 6, which was later used to infiltrate University A's
25 computer network and was identical to malware subsequently publicized by a
26 cybersecurity company.

27 (116) On or about January 10, 2018, the same day that the PRC was engaged
28 in discussions with multiple countries, including Cambodia, concerning use

1 of the Mekong River, members of the conspiracy stole data from a system
2 operated by Cambodian Government Ministry A pertaining those discussions,
3 and stored that data at DOMAIN 6, where it was protected with the password
4 “goodperson.”

5 (117) On or about January 10, 2018, members of the conspiracy stored
6 malware in a GitHub account that had been specifically created for intrusions
7 at Company C and University C, as well as other foreign companies.

8 (118) On or about January 10, 2018, members of the conspiracy sent stolen
9 trade secrets and proprietary hydroacoustic data to a GitHub account using the
10 following steganographs of a koala bear and President Donald Trump.



18 (119) On or about January 19, 2018, members of the conspiracy sent stolen
19 trade secrets and proprietary hydroacoustic data to a GitHub account using a
20 steganograph of President Donald Trump.

21 (120) On or about March 6, 2018, members of the conspiracy installed
22 MURKYTOP malware on a system operated by University A’s center
23 involved in hydroacoustic and marine research, which was identical to that
24 stored at DOMAIN 6 and was subsequently publicized by a cybersecurity
25 company.

26 (121) On or about March 9, 2018, members of the conspiracy installed
27 multiple pieces of malware on a system operated by University A’s center
28

1 involved in hydroacoustic and marine research, including PHOTO malware,
2 which was accessible with the password “goodperson.”

3 (122) On or about May 29, 2018, defendant DING XIAOYANG was
4 presented an award from the MSS for young leaders in the organization while
5 he was overseeing computer hacking and theft of data conducted by Hainan
6 Xiandun, as depicted in the following photograph:



19 All in violation of Title 18, United States Code, Section 371.

20 **Count 2**

21 **Conspiracy to Commit Economic Espionage**

22 23. The allegations contained in paragraphs 1 through 22, including Overt Acts
23 1-122, are realleged and incorporated as if set forth herein.

24 24. Beginning on a date unknown, and continuing through on or about September
25 2018, within the Southern District of California and elsewhere, defendants DING
26 XIAOYANG, aka Ding Hao, aka Manager Chen, CHENG QINGMIN, aka Manager Cheng,
27 and ZHU YUNMIN, aka Zhu Rong, and WU SHURONG, aka goodperson, aka ha0r3n, aka
28 Shi Lei, did, without authorization, knowingly and intentionally conspired with each other,

1 and others known and unknown to the Grand Jury, with the knowledge and intent of
2 benefitting a foreign government, to wit, the PRC, to:

- 3 a. Steal, and without authorization appropriate, take, carry away, and conceal, by
4 fraud artifice, and deception obtain a trade secret;
- 5 b. Without authorization copy, duplicate, sketch, draw, photograph, download,
6 upload, alter, destroy, photocopy, replicate, transmit, deliver, send, mail,
7 communicate, and convey a trade secret; and
- 8 c. Receive, buy, and possess a trade secret, knowing the same to have been stolen
9 or appropriated, obtained, and converted without authorization.

10 25. DING XIAOYANG, CHENG QINGMIN, ZHU YUNMIN, and WU
11 SHURONG conspired to steal trade secret information from University B, University G,
12 and Company H. Each of the victims took reasonable measures to keep this information
13 secret, and such information derived independent economic value from not being generally
14 known, and not being readily ascertainable through proper means by another person.

15 26. In furtherance of the conspiracy, and to effect the purpose and objectives
16 thereof, defendants DING XIAOYANG, CHENG QINGMIN, ZHU YUNMIN, and WU
17 SHURONG, and others, committed various overt acts in the Southern District of California
18 and elsewhere, including, but not limited to, the overt acts identified in paragraphs 50, 58,
19 64, 84, 87, 90-91, 93, 96-99, 105, 107, and 112, in violation of Title 18, United States Code,
20 Section 1831(1-3); all in violation of Title 18, United States Code, Section 1831(5).

21 **Criminal Forfeiture**

22 27. Upon conviction of the offenses alleged in this indictment, defendants DING
23 XIAOYANG, aka Ding Hao, aka Manager Chen, CHENG QINGMIN, aka Manager Cheng,
24 ZHU YUNMIN, aka Zhu Rong, and WU SHURONG, aka goodperson, aka ha0r3n, aka Shi
25 Lei, shall forfeit to the United States of America, pursuant to Title 18, United States Code,
26 Section 982(a)(1), any property, real and personal, involved in such offenses, and any
27 property traceable to such property.
28

1 28. In the event that any of the property described above, as a result of any act or
2 omission of the defendants:

- 3 a. cannot be located upon the exercise of due diligence;
- 4 b. has been transferred or sold to, or deposited with, a third party;
- 5 c. has been placed beyond the jurisdiction of the court;
- 6 d. has been substantially diminished in value; or
- 7 e. has been commingled with other property which cannot be divided
8 without difficulty,

9 the United States of America shall be entitled to forfeit substitute property pursuant to
10 Title 21, United States Code, Section 853(p), as incorporated by Title 18, United States
11 Code, Section 982(b)(1).

12 All in violation of Title 18, United States Code, Section 982(a)(1) and (b)(1).

13 DATED: May 28, 2021.

14
15
16 RANDY S. GROSSMAN
17 Acting United States Attorney

18
19 By:

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21 _____
22 FRED SHEPPARD
23 Assistant U.S. Attorney
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