

1. My name is Otto Steinbusch. I am an attorney for Sheppard, Mullin, Richter & Hampton, LLP, counsel for HTC Corporation and HTC America, Inc. If called as a witness, I could and would competently testify to all facts stated herein within my personal knowledge.
2. On or about July 31, 2018, I determined that the Dissertation of Willibrordus Johannes van Gils, entitled Design of Error-Control Coding Schemes for Three Problems of Noisy Information Transmission, Storage and Processing (herein “Gils Dissertation”), was published at Eindhoven University of Technology (herein “TU/e”), located at 5612 AZ, Eindhoven, Netherlands, as seen at the following link:

<https://research.tue.nl/en/publications/design-of-error-control-coding-schemes-for-three-problems-of-nois>.
3. On or about July 31, 2018, I also determined that the WorldCat Online Library Catalog database, found at www.worldcat.org, also identified the Gils Dissertation to be located at eighteen libraries, including at least:
 - Bibliotheek UvA/HvA, or, in English, Amsterdam University Library (herein “UvA”), located at Singel 425, 1012 WP Amsterdam, Netherlands, as seen at the following link:

http://lib.uva.nl/primo_library/libweb/action/search.do?fn=search&ct=search&initialSearch=true&mode=Basic&tab=all&indx=1&dum=true&srt=rank&vid=UVA&frbg=&tb=t&vl%28freeText0%29=Design+of+error-control+coding+schemes+for+three+problems+of+noisy+information+transmission%2C+storage+and+processing+&scp.scps=scope%3A%28UVA%29%2Cprimo_central_multiple_fe; and
 - Koninklijke Bibliotheek| van Nederland, or, in English, KB National Library of the Netherlands (herein “KB National Library”), located at Prins Willem-Alexanderhof 5,

2595 BE Den Haag, Netherlands, as seen at the following link:

<http://opc4.kb.nl/xslt/DB=1/CMD?&TRM=Design%20of%20error-control%20coding%20schemes%20for%20three%20problems%20of%20noisy%20information%20transmission%2C%20storage%20and%20processing%20&SRT=YOP&IKT=1016&ACT=SRCHA&LNG=EN&lang=en&op=Search>.

4. Exhibit 1025 is a true and correct copy of the WorldCat database for the Gils Dissertation at http://www.worldcat.org/search?qt=worldcat_org_all&q=Design+of+error-control+coding+schemes+for+three+problems+of+noisy+information+transmission%2C+storage+and+processing, last visited on August 18, 2018.

Eindhoven University of Technology

5. Between the dates July 30, 2018 and August 2, 2018, I corresponded with the IEC Helpdesk, at email address, IEC.Help.desk@tue.nl, of TU/e, in Eindhoven, Netherlands regarding the Gils Dissertation.
6. Exhibit 1043 is a true and correct copy of the correspondence I had with TU/e, a certified translation of the correspondence, and a certificate of translation. *Id.* at 1-7.
7. On July 30, 2018, after a telephonic conversation with the Helpdesk at TU/e, at telephone number +31 (0)40 247 23 81, I sent a request for information via email to the Helpdesk at TU/e, asking them to confirm when the Gils Dissertation was available at the library for review, and how the Gils Dissertation was catalogued. *Id.* at 2. I referenced the TU/e online catalogue at <https://research.tue.nl/en/publications/design-of-error-control-coding-schemes-for-three-problems-of-nois> which shows the Gils Dissertation as published in

1988. A true and correct copy of this online catalogue entry is found in *id.* at 6-7, last visited on August 21, 2018.

8. On August 2, 2018, John G. Engels, of the IEC Helpdesk of Eindhoven University of Technology, from email address J.G.A.Engels@tue.nl responded to my email. *Id.* at 1. Mr. Engels stated that the official publication date is typically the day the dissertation was defended (that was January 5, 1988). *Id.*
9. Mr. Engels further stated that the day after graduation, the printed thesis was added to the collection, which was on January 6, 1988. *Id.* Finally, he also stated that the thesis first went to the librarian to add codes (TU/e codes, in this case APA) (= thesis from Eindhoven), APD, (= thesis in the field of Informatics), DNH (subject = Coding theory); then it came back to the catalog department to label the book. Mr. Engels stated this process takes a few weeks. *Id.*

Bibliotheek UvA/HvA (AMSTERDAM)

10. Between July 30, 2018 and August 1, 2018, I corresponded with Bibliotheek UvA/HvA or the UvA regarding the Gils Dissertation.
11. Exhibit 1044 is a true and correct copy of the correspondence with UvA, a certified translation of the correspondence, and a certificate of translation. *Id.* at 1-11.
12. On July 30, 2018, I contacted Ms. Claudine Derrez, at email C.G.H.Derrez@uva.nl, and Ms. Martien Versteeg, at email M.G.Versteeg@uva.nl, of the Bibliotheek UvA/HvA. I asked them to confirm when the Gils Dissertation was available at the library for review, and how the Gils Dissertation was catalogued. *Id.* at 4.

13. On July 31, 2018, I received a response from Lidie Koeneman, at email A.A.Koeneman@uva.nl, who has been working at the library since 1990. *Id.* at 2. Ms. Koeneman stated that although they cannot pinpoint the exact date that the Gils Dissertation became available at the University Library of the UvA, they can attest to the fact that it was “definitely available in 1994.” *Id.* They cannot confirm any earlier than this date. *Id.*
14. Ms. Koeneman also attested to the fact that:
- The National Catalog can tell which libraries the thesis can be found in, and can also show you which keywords and codes were used to unlock the subject. So apart from the author’s name, the subject was also unlocked: by code (Dewey, UDC, Unesco) and by keyword. (Available in Amsterdam, Delft, KB [Royal Library], Eindhoven, RUG [University of Groningen], Leiden, Tilburg, Utrecht.) . . . The National Catalog already existed in 1988.
- Id.*
15. Ms. Koeneman provided a screenshot of the UvA catalog found at <http://permalink.opc.uva.nl/item/000142752>. A true and correct copy of this URL is in *id.* at 11, last visited on August 21, 2018.
16. Finally, Ms. Koeneman provided an explanation as to whether or not everyone was able to access the Gils Declaration in the Dutch Central Catalog (“NCC”) since 1995:
- Since 1983, the Dutch Central Catalog has functioned as an computerized system the Dutch libraries could use to request books from each other. From the early nineties, the NCC has been available to all library users online. Since that time, the university libraries have been entering keywords. The UB [University Library] of Amsterdam already did this earlier, but this input did not become visible in the NCC until 1995. The administrative catalog (the Common Computerized Library System (GGC)) shows that the UB of the UvA [Amsterdam University] allocated the keywords of the thesis of Van Gils, probably in 1994, but they were only visible in the NCC from 1995. Based on the allocated keywords - Data transmission, Errors, Correction, Coding theory; Theses (type) – the thesis could have been found by subject from 1995! I cannot assess how likely this is in practice. Retractable by Dewey-code or UDC is not obvious. That classification is too broad and would lead to too many hits.

In the GGC I can also see that other libraries have not allocated local keywords (local = only visible in their own local catalog), apart from the UB of TU [University of Technology] Delft; but I do not know what year that happened. The following keywords were used in Delft: coding theory, communication theory, error-correcting codes, information theory, dissertation.

Id. at 1.

The KB National Library of The Netherlands

17. Between August 3, 2018 and August 6, 2018, I corresponded with Koninklijke Bibliotheek Nationale bibliotheek van Nederland, or the KB National Library, regarding the Gils Dissertation.
18. Exhibit 1045 is a true and correct copy of the correspondence with The KB National Library, a certified translation of the correspondence, and a certificate of translation. *Id.* at 1-7.
19. On August 3, 2018, I submitted an online request for information, asking them to confirm when the Gils Dissertation was available at the Royal Library for review, and how the Gils Dissertation was catalogued. *Id.* at 1.
20. On August 6, 2018, I received a response from Hein Maassen, of the Service Team for the KB National Library. *Id.* at 2.
21. Mr. Maassen confirmed that the Gils Dissertation “
was entered into [the KB National Library] catalog on 04/26/1988. This item could be requested from the catalog from this date. During input, this thesis received the following keywords: Keyword Warehouse: Information processing; Keyword GOO [Common Subject Unlocking]: Data transmission, Errors, Correction, Coding theory; Theses (type). Nothing was modified, removed or added regarding these keywords.

The online catalog of KB National Library <http://opc4.kb.nl/> offers various search keys. This publication can be found from input using the search keys of all words, title words, author's name, keyword Warehouse, keyword GOO, publisher and application number.

Id.

22. Mr. Maassen also informed me that upon receipt of the Gils Dissertation the KB National Library created a title description, allocated an application number (which was also a placement number in the warehouses), and “the title description was entered into the catalog and the book was placed in the warehouse and could be requested and consulted from that moment.” *Id.*

I declare under the penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

A handwritten signature in dark ink, appearing to read 'Otto Steinbusch', written over a horizontal line.

Otto Steinbusch

Executed on August 21, 2018 in San Diego, California.