UNITED STATES DISTRICT COURT

DISTRICT OF NEW MEXICO

STC.UNM,

Plaintiff,

v.

INTEL CORPORATION,

Defendant.

Civil No. 1:10-cv-01077-RB-WDS

DECLARATION OF MARK T. BOHR IN SUPPORT OF INTEL'S OPPOSITION TO STC'S MOTION TO COMPEL AND IN SUPPORT OF INTEL'S MOTION TO AMEND THE INTERIM PROTECTIVE ORDER

1. My name is Mark T. Bohr. Except where noted, I have personal knowledge of the facts stated below and would testify that they are true if asked to do so. I am making this declaration (1) to oppose STC's efforts to discover commercially valuable and carefully guarded trade secret information about research and development into future manufacturing technology that will not be finalized or used to make commercial products until after the patent at issue has expired, and (2) to support Intel's motion for a protective order that restricts the manner and location for storing copies of top secret information about existing manufacturing technology and that imposes a bar against prosecuting patents after having access to Intel's information.

2. I am an electrical engineer by training and Intel's Director of Process Architecture and Integration. I am one of eight Senior Fellows at Intel, a company that has more than 70,000 employees. I joined Intel in 1978. Since that time, I have either worked on or managed the development of Intel's manufacturing improvements. In 1981, I helped develop Intel's first CMOS (complimentary metal oxide semiconductor) technology, which continues to be used in

most semiconductor logic chips today. I hold 56 patents in the general area of integrated circuit processing.

3. Intel is the world's most advanced manufacturer of semiconductor devices. Throughout my 30 years at Intel, a critical driving force behind microprocessor improvements has been our ability to shrink the size and enhance the uniformity and electrical performance of transistors and other components that make up microprocessors. Each new processing technology requires new equipment and adjustments and innovations to the process flow (the comprehensive set of steps needed to make a semiconductor), the "recipes" for individual steps, and the raw materials used in the process. Through persistent and ever-increasing investment in research and development, Intel has succeeded in maintaining an 18-month lead over its nearest competitors in the size or geometry of its process technology.

4. For example, Intel's current advanced microprocessors are manufactured using 32 nm technology (32 nanometers referring to the width of certain features in the chip). Intel began manufacturing 32 nm products in the fourth quarter of 2009. Other semiconductor companies have announced plans to introduce products using 32 nm processing technology, but not until mid to late 2011. Similarly, Intel has announced plans to start production of 22 nm products in the second half of 2011. No other semiconductor company has announced products made with 22 nm process technology.

5. Intel invests several billion dollars to develop each new generation of process technology. It makes such massive investments because process technology improvements can both increase performance and power efficiency and reduce per-unit manufacturing costs. These enormous expenditures on research and development also provide Intel a large lead-time over

competitors, and the details of that technology are among Intel's most valuable trade secrets. Both the lead-time advantage and the technological superiority are immensely valuable (worth many billions of dollars), and the detailed recipes, process flows, and data for new manufacturing processes thus are among Intel's most valuable trade secrets.

6. Although competitors tear open and examine Intel's microprocessors as soon as they become available on the market, the information they can glean about the manufacturing processes from such reverse engineering work is quite limited when it comes to process technology. Competitors can use reverse engineering to see the results of Intel's process technologies (the size, shape and profile of transistors), but reverse engineering reveals little about how Intel's process technologies produce those results (the process steps, recipes and manufacturing equipment or techniques).

7. Intel goes to great length and expense to protect the secrecy of its process technology. It limits the number of persons inside Intel with access to such information and further restricts the technology to which any one person has access. For example, an Intel engineer tasked with developing an optical mask for a lithography step in the process flow would not typically have access to information about the process for coating a layer of photoresist before the lithography step or the process for developing the photoresist after it has been exposed during the lithography step. As a result, even though Intel may have hundreds of engineers working on the development of a given process technology, each engineer has access to only a small portion of the entire process and so would be unable to compile the entire process for the benefit of a competitor.

8. In addition, Intel tightly restricts physical access to data that would reveal details about the process technology. Intel maintains data or documentation containing the information on fully encrypted servers inside Intel facilities with state-of-the-art security. Intel prohibits the transport of such data and documentation on laptops or on paper out of the building. Such tight security and control measures are essential because even an accidental disclosure of process technology information would have disastrous consequences. If a competitor succeeded in gaining access to Intel's secret process technology information, it would gain a major competitive advantage that in turn could cost Intel billions of dollars.

9. I understand that STC has demanded access to detailed information about Intel's ongoing research and development on potential future generations of process technology, including the research and development for geometries sizes of 15 nm and 11 nm. (In fact, Intel is not developing processes at 15 nm and 11 nm, but rather at 14 nm and 10nm.)

10. These future generation manufacturing processes are speculative given the extremely early stages of development, during which time we are experimenting with and testing many different options. If the traditional schedule for the completion and implementation of the next generation of process technology holds, the research and development for technologies capable of making products with 14 nm feature sizes will not be complete, and commercial production will not begin, until late 2013 or early 2014. The process for manufacturing products at 10 nm feature sizes is years beyond that.

11. Although future technologies are far from set, the ongoing research data is top secret and highly restricted, even within Intel. Information about the particular directions or adjustments that Intel is and is not exploring would be immensely valuable to a competitor

seeking to close the gap on Intel's process technology lead. The potential competitive harm to Intel from disclosure of information about future technologies is greater than the harm that would result from disclosure of existing or more mature technologies. Accordingly, fewer people within Intel are permitted to know about the cutting edge of the development process.

12. Discovery into Intel's ongoing research and development activities on technology capable of feature sizes at 14 nm or 10 nm would also disrupt those activities. Because such technologies are literally being investigated, created, revised and redone on a daily basis, there is no easily identified set of information to provide in discovery. Attempting to capture the process of investigating what Intel's leading-edge process engineers are doing at the very moment that they are experimenting with different options or developing untested methods would be enormously difficult and disruptive. Yet, even if such a collection were possible, it would not reveal what Intel actually plans to use when it commercializes these geometries. Those decisions will not be made conclusively for a long time to come, and the experiments run today could be deemed to be a research dead end tomorrow. The process of investigating what Intel's leading-edge process engineers are doing at the very moment that they are attempting to decide what to do, including which new ideas to investigate, would be a costly distraction and an impediment to their progress.

13. I also understand that STC is demanding to make copies of Intel's process technology data and documentation and to give physical custody of those copies to a retained consulting expert. Such physical custody of copies would materially increase the risk of unauthorized disclosure of Intel's most valuable trade secret information. STC is seeking to give its retained expert greater access to Intel's confidential information than even Intel engineers

working on the technology receive. No Intel employee—including me—is permitted to take such documentation home, regardless of whether the materials would be kept in a locked safe or other "secure" location. And unlike Intel engineers whose individual access is limited to discrete portions of individual steps in the process, STC seeks to have its expert retain physical custody of a wider portion of the entire technology process.

14. I further understand that Intel is requesting that a "prosecution bar" be added to the Protective Order that would prohibit an individual who receives access to certain types of critical data and documentation about Intel's process technology from participating in patent prosecution or claims drafting in subjects that relate to that technology. The data and documentation to which STC has requested access contain non-public highly confidential information that someone involved in patent prosecution in related subject matter would find very relevant to their work. I can speak to this issue because of my own background in the patent process. As noted above, I hold more than 50 patents. I have been involved in preparing patent disclosures, describing the inventions and assisting in the drafting of patent claims.

15. The type of highly confidential information requested by STC would be highly relevant to someone involved in the area of preparing and prosecuting patent applications in the subjects related to process technology. Those documents and data describe intricate details of process steps, recipes, equipment settings and techniques for making microprocessors with the smallest feature sizes in the world. Leaving aside the concern that such information could be misused intentionally, Intel's information could easily be inadvertently or subconsciously used to Intel's detriment.

16. Exposure to highly confidential, non-public information regarding Intel's process technology could influence the drafting of patent claims in a way that the claims would cover Intel's technology. Once a skilled engineer or patent prosecutor sees the data and documents that reveal the details of Intel's process technology, he or she cannot realistically be expected to forget or disregard such knowledge when working on patents. If anyone other than Intel obtained a patent that was drafted to cover Intel's products as a result of STC's access to Intel trade secrets, Intel would find itself in the grave position of having to defend itself against a patent that should never have been granted, or at least not granted to anyone other than Intel.

17. As noted, the details of Intel's process technology cannot be discovered through reverse engineering. As a result, access to details about Intel's current and future process technology would expose an attorney or expert to information that they would not otherwise have any legitimate way to learn or obtain for many years.

I declare under penalty of perjury that the foregoing statements are true and correct.

Dated: 4/5/11 at Santa Clara CA.

Mark T. Bohr

Certificate of Service

The undersigned hereby certifies that on April 5, 2011, the foregoing document was electronically filed with the Clerk of Court using the CM/ECF system, which will automatically send notification of such filing to all counsel who have entered an appearance in this action.

ATKINSON, THAL & BAKER, P.C.

/s/ Clifford K. Atkinson
Clifford K. Atkinson

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