

## ANALYSIS OF PROPOSED CONSENT ORDER TO AID PUBLIC COMMENT

In the Matter of Intel Corporation, Docket No. 9341

The Federal Trade Commission (“Commission” or “FTC”) accepted for public comment an Agreement Containing Consent Order (“Proposed Consent Order”) with Intel Corporation (“Intel”) to resolve an Administrative Complaint issued by the Commission on December 16, 2009.<sup>1</sup> The Complaint alleged that Intel unlawfully maintained its monopoly in the relevant CPU markets, and sought to acquire a second monopoly in the relevant graphics markets, using a variety of unfair methods of competition. Consumers were harmed by Intel’s conduct, which resulted in higher prices, less innovation, and less consumer choice in the relevant markets. Consumers were also harmed by Intel’s deceptive disclosures related to its compilers, which violated both competition and consumer protection principles. The Proposed Consent Order will bring immediate relief in the relevant markets and puts Intel under Commission Order.

As described in detail below, the Proposed Consent Order has two fundamental goals. First, it seeks to undo the effects of Intel’s past restraints on competition by enhancing the ability of AMD, NVIDIA, Via, and others to compete effectively with Intel. To that end, the Proposed Consent Order seeks: 1) to make it easier for AMD, NVIDIA, and Via to use third-party foundries to manufacture products (to enable them to better match Intel’s manufacturing advantages) (Section III.A.); 2) to give AMD, NVIDIA, and Via flexibility to secure modifications of change of control provisions in their Licensing Agreements with Intel (Section III.B); 3) to extend Via’s intellectual property license (Section III.C); and 4) to provide assurances to manufacturers of complementary and peripheral products that they will be able to connect their devices to Intel’s CPUs (Section II). These provisions compel Intel to make certain offers; they do not compel a third party to accept them. The goal is to require Intel to open the door to renewed competition, not to force a third party to take any particular action.

Second, the Proposed Consent Order is designed to protect the ability of customers and existing and future Intel competitors to engage in mutually beneficial trade, while prohibiting Intel from using certain practices to deter or thwart such trade. The Proposed Consent Order therefore prohibits Intel from engaging in: 1) certain pricing practices that could allow Intel to exclude competitors while maintaining high prices to consumers (Section IV.A.); 2) predatory design that disadvantages competing products without providing a performance benefit to the Intel product (Section V); and 3) deception related to its product road maps, its compilers, and product benchmarking (Sections VI, VII, and VIII).

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<sup>1</sup> The Complaint was brought under Section 5 of the Federal Trade Commission Act, which “was designed to supplement and bolster the Sherman Act and the Clayton Act ... to stop in their incipiency acts and practices which, when full blown, would violate those Acts ... as well as to condemn as ‘unfair methods of competition’ existing violations” of those acts and practices. *F.T.C. v. Brown Shoe Co.*, 384 U.S. 316, 322 (1966) (quoting *F.T.C. v. Motion Picture Adv. Serv. Co.*, 344 U.S. 392, 394-95 (1953)); see also *F.T.C. v. Indiana Fed’n of Dentists*, 476 U.S. 447, 454 (1986). In addition, the Commission has the jurisdiction under Section 5 to challenge “unfair or deceptive acts or practices in or affecting commerce . . .”

The Proposed Consent Order is for settlement purposes only and is tailored to remedy the effects of Intel's specific conduct in the market context in which that conduct took place. The purpose of the Commission's Order is not punitive but rather remedial.<sup>2</sup> Intel's adherence to the specific provisions will not insulate it from future Commission scrutiny or enforcement action if its conduct otherwise violates the antitrust laws. That is, the Proposed Consent Order does not operate as a safe harbor for Intel. The Commission can not only challenge (and seek civil fines for) Order violations, but also has authority to challenge any practice not prohibited by the Proposed Consent Order (including, but not limited to, any pricing practice or design change that harms competition) in a potential future legal challenge. The prohibitions and standards utilized in the Proposed Consent Order do not necessarily reflect the applicable legal standards under the Sherman Act, Clayton Act, or the FTC Act; indeed, the legal standards applicable to some of these practices remain unsettled by the Supreme Court and the federal courts of appeal. The Commission expressly reserves the right to challenge Intel's future anticompetitive conduct if it has reason to believe that, considered in context, the effect of Intel's conduct is to enable it to increase or maintain power over price, output, or non-price competition in any market in which it is a participant. Furthermore, the Commission has the authority to monitor and determine whether the Commission has reason to believe that Intel has not strictly complied with all of the provisions of this Proposed Consent Order (including, but not limited to, the obligation to negotiate a license in good faith after a change of control of AMD, NVIDIA, or Via). The Commission expressly reserves its right to exercise this authority as well.

The Proposed Consent Order has been placed on the public record for 30 days for comments. Comments received during this period will become part of the public record. After 30 days, the Commission will review the Proposed Consent Order and comments received and will decide whether it should withdraw from the Proposed Consent Order or make final the Order contained in the Agreement. The purpose of this analysis is to invite and facilitate public comment concerning the Proposed Consent Order.

## **I. The Commission's Complaint**

The Federal Trade Commission voted 3-0 to issue an Administrative Complaint against Intel on December 16, 2009. Intel is a Delaware corporation with its principal place of business in Santa Clara, California. Intel develops, manufactures, markets, and sells computer hardware and software products, including x86 CPUs and graphics processors. The Complaint alleged that Intel engaged in a course of conduct over a ten-year period that was designed to, and did, stall the widespread adoption of non-Intel products. That course of conduct allowed Intel to unlawfully maintain its monopoly in the relevant CPU markets through means other than competition on the merits and created a dangerous probability that Intel would acquire a monopoly in the relevant GPU markets.

First, the Complaint alleges that Intel maintained its monopoly in the markets for x86 CPUs for desktops, notebooks, and servers, as well as smaller relevant markets, by engaging in a course of conduct that foreclosed or limited the adoption of non-Intel x86 CPUs. The CPU of a

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<sup>2</sup> As a general rule, the Commission's statutory authority is designed to remedy conduct going forward as opposed to punishing past conduct. For example, the Commission does not have the authority to levy fines for antitrust violations.

computer system processes data and controls other devices in the system, acting as the computer's "brains." The x86 CPU architecture and instruction set is the industry standard for CPUs used in notebooks, desktops, workstations, and volume servers.<sup>3</sup> The Complaint alleges a variety of relevant markets tied to the x86 CPU architecture including an overall x86 market. The non-x86 CPU alternatives did not constrain Intel's monopoly during the relevant time period.

Intel's only significant competitor in the relevant x86 CPU markets is AMD, based in Sunnyvale, California. AMD mounted serious challenges to Intel's position in 1999 when it released its Athlon x86 CPU and again in 2003 when it released its Opteron x86 CPU. The only other firm that sells x86 CPUs is a small Taiwanese firm, Via Technologies. A fourth firm, Transmeta, sold a small number of x86 CPUs in the notebook market but exited the market in 2006.

Over the last decade, Intel's share of the overall x86 CPU market (desktop, notebook, and server) has consistently exceeded 65 percent; its share of the x86 CPU desktop market has consistently exceeded 70 percent; and its share of the x86 CPU notebook market has consistently exceeded 80 percent. Intel's monopoly position in these markets is partially protected by significant barriers to entry, including reputation, scale economies, intellectual property rights, costs associated with building and operating large manufacturing facilities, and research and development costs. These legitimate barriers to entry make vigorous enforcement of the competition laws all the more important. The Proposed Order is designed to ensure that Intel cannot blunt entry and expansion by raising barriers in the relevant markets using means other than competition on the merits.

Second, the Complaint also challenges Intel's unfair methods of competition in the Graphics Processing Unit ("GPU", also referred to as "graphics") markets. GPUs originated as specialized processors for generating computer graphics. In recent years, GPUs have become increasingly sophisticated as computing graphics have grown in importance. GPUs have also evolved to take on more functionality. GPUs are increasingly performing computations traditionally performed by the CPU, allowing OEMs to use lower-end CPUs or fewer microprocessors for a given level of performance. As a result, GPUs are creating better products at lower prices for consumers.

The graphics market is highly concentrated with high barriers to entry. Intel competes in the graphics market with NVIDIA and AMD/ATI. Intel makes and sells graphics processors that are either integrated into chipsets or directly onto the CPU. NVIDIA and AMD/ATI sell both graphics processors integrated into chipsets as well as discrete graphics cards. NVIDIA has been at the forefront of developing GPU functionality beyond merely graphics applications. The growth of NVIDIA's General Purpose GPU ("GP-GPU") computing allegedly threatened to undermine Intel's x86 CPU monopoly. The Complaint alleges that Intel engaged in behavior, other than competition on the merits, to marginalize NVIDIA and slow the adoption of GP-GPU computing.

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<sup>3</sup> There are a handful of alternative CPU architectures that are used in very high-end servers or handheld devices. However, these alternatives did not compete in the notebook, desktop, workstation, or volume server x86 CPU markets during the relevant time period.

## A. Unfair and Exclusionary Commercial Practices in the Relevant CPU Markets

The Complaint alleges that Intel engaged in a variety of unfair methods of competition to foreclose or limit the adoption of non-Intel x86 CPUs by the world's largest original equipment manufacturers ("OEMs"). The largest original equipment manufacturers ("Tier One OEMs") include Hewlett-Packard/Compaq, Dell, IBM, Lenovo, Toshiba, Acer/Gateway, Sun, Sony, NEC, Apple, and Fujitsu, which combined account for more than 60 percent of all personal computer sales and are the only suppliers qualified to fulfill certain needs of large business buyers. Tier One OEMs provide a crucial distribution channel for any manufacturer of CPUs, chipsets or GPUs. Tier One OEMs supply high volume sales with the concomitant substantially reduced distribution cost. In three respects, Intel's conduct foreclosed significantly non-Intel x86 CPU suppliers from selling product to Tier One OEMs.

First, Intel induced certain Tier One OEMs to forgo adoption or purchases of non-Intel CPUs. When Intel failed to prevent an OEM from adopting non-Intel CPUs, it sought to limit such purchases to a small percentage of the sales of certain computer products. The Complaint alleges, for example, that Intel entered into *de facto* exclusive dealing arrangements and market-share deals with those Tier One OEMs that agreed to limit their purchases of AMD or Via products. Tier One OEMs that purchased all or nearly all of their CPU requirements from Intel received large rebates and lump-sum payments from Intel, as well as guarantees of supply during supply shortages. In other cases, Intel paid Tier One OEMs not to sell computers with non-Intel CPUs, such as AMD's, Transmeta's or Via's CPUs. The Complaint alleges that these arrangements did not represent competition on the merits, were designed to minimize pass-through of rebates to consumers, and that Intel entered into these arrangements to block or slow the adoption of competitive products by the Tier One OEMs and thereby maintain its monopoly.

Second, Intel threatened OEMs that considered purchasing non-Intel CPUs with, among other things, increased prices on other Intel purchases, the loss of Intel's technical support, and/or the termination of joint development projects.

Third, Intel sought to induce OEMs to limit advertising and branding, and to forgo advantageous channels of distribution for computers that contained non-Intel CPUs. For example, Intel induced OEMs to forgo advertising, branding, certain distribution channels, and/or promotion of computers containing non-Intel CPUs. To secure these restrictive dealing arrangements with OEMs, Intel threatened to withhold rebates, technical support, supply, and/or to terminate joint development projects, among other things.

These practices severely limited the number of instances in which OEMs selling non-Intel-based PCs competed directly against OEMs selling Intel-based PCs, especially in servers and in commercial desktops and notebooks. When an OEM selling Intel-based PCs competed against OEMs selling AMD-based PCs, Intel often had to sell CPUs at competitive prices. When such competition was eliminated, Intel could sell CPUs at supra-competitive prices. Consequently, it was able simultaneously to charge above-competitive prices and at the same time to exclude its rivals, resulting in both higher prices and fewer choices for consumers. In addition, Intel's retroactive quantity discounts were of a type that could readily disguise effective

below-cost pricing, which would, under the circumstances, present a strong risk of predatory effects.

This effectively allowed Intel to compete by raising the effective prices of AMD's and Via's products rather than lowering the effective prices of its own. It did this by effectively imposing a penalty on any customers who purchased from Intel's rivals. Intel's market share discounts and retaliatory practices described above all had this effect, constituting an effective increase to the rival's price. The end result was that Intel could make a rival's actual low prices look very costly to customers without Intel's needing to reduce its own prices or expand its own output.

## **B. Compiler and Benchmark Deception**

The Complaint alleges that Intel's failure to fully disclose the changes it made to its compilers and libraries beginning in 2003 violated both competition and consumer protection provisions of Section 5 of the FTC Act.

A compiler is a tool used by software developers to write software. The compiler translates the "source code" written in high-level computer languages into 0's and 1's that can be run as software on consumers' computers. Intel's compilers compete with Microsoft's compilers, open-source compilers, and others. Intel's compiler is used by developers of high-performance applications.

The Complaint alleges that AMD's Athlon CPU, released in 1999, and its Opteron CPU, released in 2003, equaled, and in some segments surpassed, Intel's technology. Intel introduced a new version of its compiler shortly before AMD released its Opteron CPU. The compiler features introduced by Intel in 2003 effectively slowed the performance of software written using Intel's compilers on non-Intel x86 CPUs such as Opteron. To the unknowing public, OEMs, and software vendors, the slower performance of non-Intel-based computers when running certain software applications was mistakenly attributed to the performance of non-Intel CPUs.

The Complaint also alleges that the direct impact of Intel's deceptive disclosures was on independent software vendors and developers that used Intel's compiler to write software. They were unaware of the changes in the Intel compiler that would impact the performance of their software when it ran on non-Intel-based computers. The Complaint alleges Intel intentionally misrepresented the cause of the performance differences and whether it could be solved.

Intel's deceptive disclosures related to its compiler redesign were compounded by the adoption of industry standard benchmarks that included software compiled using Intel's compiler. Benchmarks are performance tests that compare attributes of competing CPUs. Industry standard benchmarks are used by OEMs and consumers to judge performance of competing CPUs. Intel failed to disclose to benchmarking organizations the effects of its compiler redesign on non-Intel CPUs. Several benchmarking organizations adopted benchmarks that measured performance of CPUs by running software programs compiled using the Intel compiler. The software compiled using Intel's compiler skewed the performance results in Intel's favor. Intel promoted its systems' performance under such benchmarks as realistic measures of typical or

“real world” computer performance. The benchmarks were not accurate or realistic measures of typical computer performance and they overstated the performance of Intel’s products as compared to non-Intel products.

The Complaint alleges Intel’s deceptive disclosures related to its compiler contributed to Intel’s maintenance of its monopoly power. For example, AMD’s CPU performance advantages were muted by Intel’s compiler. Intel’s deception distorted the competitive dynamic and harmed consumers. The Complaint also alleges that Intel’s failure to disclose was a deceptive act or practice.

Among the harms to consumers caused by Intel’s deceptive conduct was the harm to the credibility and reliability of industry benchmarks. Industry benchmarks are important tools for consumers to make informed purchasing choices. Informed consumer choice is a basic building block of competition.

### **C. Unfair and Exclusionary Conduct to Suppress GPU Competition**

Intel worked with NVIDIA for a number of years to ensure that NVIDIA’s GPUs could interoperate with Intel CPUs, and licensed NVIDIA to allow it to manufacture Intel-compatible chipsets with integrated graphics (also referred to as “chipsets with integrated GPUs”). The Complaint alleges that Intel began to perceive NVIDIA as a threat in both the market for chipsets with integrated graphics and the market for CPUs. The Complaint further alleges that Intel took a number of actions to blunt the competitive threat posed by NVIDIA. For example, Intel denied NVIDIA the ability to produce integrated chipsets that would be compatible with Intel’s next generation CPUs. In doing so, the Complaint alleges that Intel misled NVIDIA on Intel’s “roadmaps” or product plans, causing NVIDIA to waste resources and crucial time researching and designing integrated chipsets when, in fact, Intel allegedly had no intention of permitting NVIDIA integrated chipsets to interoperate with Intel’s next generation of x86 microprocessors. This increased NVIDIA’s costs and delayed the development of other products that would have increased competition in both the market for chipsets and the market for CPUs. The Complaint also alleges that Intel took steps to create technological barriers to preclude non-Intel integrated chipsets from interconnecting with future Intel CPUs. The Complaint further alleges that Intel bundled its CPUs with its own integrated chipsets and then priced the bundle to punish OEMs for buying non-Intel integrated chipsets.

## **II. Terms of the Proposed Consent Order**

The touchstone of the Proposed Consent Order is the protection of consumers and competition. Thus, the Proposed Consent Order provides structural relief designed to restore the competition lost as a result of Intel’s past conduct, and injunctive relief that prevents Intel from engaging in future unfair methods of competition. The injunctive relief would prohibit Intel, when faced with new competitive threats, from engaging in the exclusionary and unfair conduct alleged in the Complaint. These provisions are designed to open the door to fair and vigorous competition in the relevant markets, leading to lower prices, more innovation, and more choice for consumers. The immediacy of this relief is particularly important in these rapidly changing markets.

The Complaint did not seek to strip Intel of its x86 monopoly, which was in large measure gained by innovation and associated intellectual property rights. Rather, the Proposed Consent Order is designed to undo the effects of Intel's anticompetitive conduct and prevent its recurrence, by restoring as much as possible the competitive conditions that would have prevailed absent the anticompetitive behavior and by ensuring that the doors to competition remain open. The Proposed Consent Order clarifies and extends AMD's and Via's rights to the x86 technology. The injunctive relief in the Proposed Consent Order is thus particularly important today to ensure that AMD's new CPU products can have a fair test in the marketplace on the merits and that Via more quickly has the clear path it needs to design and produce its next generation of CPU products. The Complaint did not seek to fine or penalize Intel for its conduct because the Commission lacks that authority for violations of the antitrust laws.

### **A. Section II of the Proposed Consent Order**

Section II of the Proposed Consent Order requires Intel to maintain an open PCI Express ("PCIe") Bus Interface on all of its CPU platforms for six years. The PCIe bus is an industry standard bus used to connect peripheral products such as discrete GPUs to the CPU. A bus is a connection point between different components on a computer motherboard. The PCIe bus serves a critical function on the Intel platform. Intel's commitment to maintain an open PCIe bus will provide discrete graphics manufacturers, such as NVIDIA and AMD/ATI, and manufacturers of other peripheral products, assurances that their products will remain viable and thus maintain their incentives to innovate -- including the continued development of alternative computing architectures such as General Purpose GPU computing. Intel's commitment extends to high performance computing platforms that have been at the forefront of General Purpose GPU computing. The Commission recognizes the importance of the continued development of this potential alternative computing architecture.

The Commission recognizes that it may be difficult to forecast the future of innovation in these markets. The CPU and GPU markets are dynamic, and technology may be very different in three or four years. The Commission has the authority to reduce the number of years Intel must maintain the PCIe bus on any of its CPU platforms. For example, the Commission may reduce the commitment if the market has moved away from PCIe and it no longer serves a gateway function to Intel's CPU.

Section II.C of the Proposed Consent Order prohibits Intel from limiting the performance of the PCIe bus in a manner that would hamper graphics performance or GP-GPU compute functionality of discrete GPUs. The provision would assure NVIDIA, AMD/ATI, and other potential manufacturers of products that would use the PCIe bus that they will be able to connect to Intel CPUs in both mainstream and high-performance computers in the future, and that the performance of their products will not be degraded by Intel. These assurances will also allow NVIDIA and others to continue developing GP-GPU computing as a complement to the processing power of the CPU.

## **B. Intel Assurances on Third Party Foundry Rights**

Section III.A of the Proposed Consent Order would require Intel to allow AMD, NVIDIA, and Via to disclose relevant “have made” rights under their respective licensing agreements with Intel to foundries and customers. The Proposed Consent Order would further require Intel to confirm to any foundry or customer that AMD, NVIDIA, and Via licenses confer such “have made” rights. “Have made” rights allow AMD, NVIDIA, and Via to contract out manufacturing to third parties. Absent Intel’s assurances and disclosures, customers and foundries might be deterred from making or selling the products of these competitors when they are, in fact, licensed, based upon unwarranted fear of being sued by Intel for infringement. These disclosures will help eliminate any uncertainty surrounding the rights of AMD, NVIDIA, and Via to use third party foundries to manufacture x86 microprocessors or other products under their respective cross licenses.

## **C. Change of Control Modifications to Current License Agreements with AMD, NVIDIA, and Via**

Section III.B of the Proposed Consent Order would require Intel to offer to modify the change of control terms in Intel’s intellectual property licenses with AMD, NVIDIA, and Via. The Commission is concerned that Intel’s past conduct has weakened AMD and Via – Intel’s only x86 competitors. This provision seeks to ensure that these existing competitors can partner with third parties to create a more formidable competitor to Intel.

The existing change of control terms in licensing agreements potentially limit the ability of AMD, NVIDIA, and Via to take part in a merger or joint venture, or to raise capital. The provisions in the Proposed Consent Order are designed to allow AMD, NVIDIA, and Via to enter into a merger or joint venture with a third party, or to otherwise raise capital, without exposing itself to an immediate patent infringement suit by Intel. In the event that AMD, NVIDIA, or Via undergo a change of control, these provisions prohibit Intel from suing for patent infringement for 30 days. Furthermore, Intel must offer a one-year standstill agreement during which the acquiring party and Intel would not sue each other for patent infringement while both parties enter into good faith negotiations over a new license agreement.

The Commission takes seriously Intel’s commitment under these provisions in the Proposed Consent Order. The Commission has authority under the Order to evaluate and determine whether Intel in fact engages in good faith negotiations and the Commission will be able to enforce the Proposed Consent Order if Intel does not negotiate in good faith. In the event the change of control terms are invoked, the Commission will carefully scrutinize Intel’s conduct and take action, if appropriate.

## **D. Via x86 Licensing Agreement Extension and Assurances**

Section III.C of the Proposed Consent Order requires Intel to offer a five year extension to its cross-license with Via. The extension of the cross license guarantees that Via has the opportunity to continue competing in the x86 CPU market until at least 2018. Section III.C also requires Intel to confirm that Via may lawfully make, sell, and import x86 products without



violating the Intel license. This disclosure is designed to eliminate uncertainty surrounding Via's right to compete in the relevant x86 CPU markets through 2018.

The extension of the Via license agreement, coupled with the modifications to the change-of-control provisions in Section III.B, open the door to a potential joint venture or acquisition of Via and its x86 license by a strong and well financed entrant to the x86 markets.

## **E. Commercial Practices Provisions**

The prohibitions in Section IV.A of the Proposed Consent Order address Intel's commercial practices. These provisions are specifically designed to protect competition, not any one competitor. The Proposed Consent Order protects competition in the markets for CPUs (including CPUs with integrated graphics), chipsets, and GPUs. In contrast, Intel's settlement with AMD in November 2009 only protected AMD from certain exclusionary practices and did not extend to GPUs or chipsets.

The rationale for extending the prohibitions to all chipsets is two-fold. First, Intel's CPUs and chipsets are sold on a one-to-one basis. That is, an Intel chipset will only work with an Intel CPU. Thus, an agreement to purchase chipsets exclusively from Intel means that an OEM must purchase CPUs exclusively from Intel. Likewise, an OEM's agreement to purchase 95 percent of its chipsets from Intel means that an OEM will purchase at least 95 percent of its CPUs from Intel. Second, extending the Proposed Consent Order to chipsets also protects competition in the market for chipsets. The Commission recognizes that chipsets still play an important role in platform innovation. The provisions are designed to protect the development of new competitive options that may emerge from this market.

### **1. Prohibitions on Commercial Practices**

The Proposed Consent Order prohibits Intel from engaging in seven enumerated sales practices in the CPU, chipset, and GPU markets. Section IV.A prohibits Intel from offering benefits to OEMs, original design manufacturer ("ODMs"), or End Users in exchange for assurances that the customers will refrain from dealing with Intel's competitors. "Benefit" is broadly defined and includes not only monetary consideration but also encompasses access to technical information, supply, and technical and engineering support. Section IV.A also prohibits Intel from punishing its customers by withholding benefits from those that purchase from non-Intel suppliers of CPUs, chipsets, and GPUs.

Section IV.A.1 would prohibit Intel from conditioning a benefit on an OEM's, ODM's, or End User's agreement to purchase a CPU, chipset, and/or GPU exclusively from Intel in any geographic area (e.g., the United States), market segment (e.g., servers, workstations, commercial desktops, etc.), product segment (e.g., multi-processor servers, high-end desktops, etc.), or distribution channel. For example, the Proposed Consent Order would prohibit Intel from conditioning a benefit on an OEM's agreement to purchase CPUs for servers exclusively from Intel.

Section IV.A.2 would prohibit Intel from conditioning a benefit on an OEM's, ODM's, or End User's agreement to limit, delay, or refuse to purchase a CPU, chipset, and/or GPU from a non-Intel supplier. For example, Intel would be prohibited from conditioning a benefit to an OEM on that OEM's agreement to delay the introduction of a computer product incorporating a non-Intel product.

Sections IV.A.3 and IV.A.4 address threats to retaliate against an OEM, ODM, or End User for doing business with a non-Intel supplier. Section IV.A.3 would prohibit Intel from conditioning a benefit on whether an OEM, ODM, or End User purchases, sells, or launches a CPU, chipset, and/or GPU from a non-Intel supplier. For example, Intel could not condition a benefit on an OEM's agreement to cancel a launch of a Personal Computer that includes a non-Intel GPU. Section IV.A.4 prohibits Intel from withholding a benefit from an OEM, ODM, or End User if it designs, manufactures, distributes, or promotes a product incorporating a non-Intel CPU, chipset, and/or GPU. For example, Intel could not withhold a benefit from an OEM because that OEM participated in an AMD launch event.

Section IV.A.5 would prohibit Intel from directly or indirectly conditioning a benefit on the share of CPUs, chipsets, and/or GPUs that the OEM or End User purchases from Intel. For example, Intel could not condition a benefit on an OEM's agreement to purchase at least 95 percent of its CPU requirements for commercial desktops from Intel. Nor could Intel condition a benefit on an OEM's agreement to purchase no more than 5 percent of its CPU requirements for commercial desktops from a non-Intel supplier. In a market such as this one, where the most realistic mode of competition by competitors to a monopolist involves their selling initially modest quantities to direct buyers who also buy large quantities from the monopolist, such conditioning can amount to a tax on the growth of such competition, and can enable the monopolist to sustain high prices at the same time as it limits competition and decreases consumer choice.

Section IV.A.6 would prohibit Intel from bundling the sales of its CPUs with its chipsets when the effective selling price of either piece of the bundle is below Intel's Product Cost. Intel's Product Cost is based on data maintained in the ordinary course of business by Intel, is represented to be used by Intel for business decisions, and is significantly higher than its average variable cost. The provision is based on the standard articulated by the Ninth Circuit in *PeaceHealth* and is administrable using that standard and the Product Cost data. This provision is designed to target specific conduct alleged in the Complaint. For example, the Complaint alleges that Intel bundled the sale of its Atom x86 CPU and chipset in such a way that the effective selling price of the chipset was below cost, in an effort to foreclose third party vendors of chipsets. The provision does not reflect an endorsement or adoption of *PeaceHealth* by the Commission as the applicable legal test for bundling practices. The Commission expressly retains the right to pursue independent claims against Intel or any alleged monopolist under Section 2 of the Sherman Act or Section 5 of the FTC Act based on a different legal standard such as (by way of example), the standard articulated by the *en banc* decision in the Third Circuit's *LePage's* case.<sup>4</sup>

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<sup>4</sup> Compare *LePage's, Inc. v. 3M Co.*, 324 F.3d 141, 155, 162 (3d Cir. 2003) (*en banc*) with *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883 (9th Cir. 2008).

Section IV.A.7 would prohibit Intel from offering lump sum payments to an OEM, ODM, or End User for reaching a particular threshold of purchases from Intel. For example, Intel would be prohibited from offering an OEM a \$100 million rebate once it purchases 5 million x86 CPUs. The retroactive nature of these payment structures can disguise implicitly below-cost pricing that can unfairly exclude equally efficient competitors and smaller entrants, resulting in a loss of competition and harm to consumers. Intel, however, would not be precluded from offering volume discounts on incremental purchases above a particular threshold. For example, Intel could offer an OEM a price of \$100 for each CPU up to 1 million units and a price of \$90 for each CPU in excess of 1 million units. However, Intel would not be permitted to offer a price below Product Cost for the excess units. The Commission will carefully scrutinize Intel's implementation of this provision to ensure it does not price its products in such a way that forecloses competition.

## **2. Exceptions to the Commercial Practices Prohibitions**

The exceptions to the prohibitions in Section IV.A are designed to allow Intel to offer competitive pricing and enter into other procompetitive deals with OEMs, ODMs, and End Users. These exceptions permit conduct that may truly benefit consumers while still preventing Intel from engaging in the type of anticompetitive behavior identified in the Complaint. Nothing in these exceptions, however, would prevent the Commission from pursuing independent claims against Intel under Section 2 of the Sherman Act or Section 5 of the FTC Act if Intel engages in practices that do not violate the Proposed Consent Order but are nonetheless exclusionary or unfair and result in harm to consumers.

Under Section IV.B.1, Intel is not prohibited from conditioning a Benefit on sales terms that are not expressly prohibited by the Order. For example, Intel could offer a discount to an OEM for a CPU with the condition that it is used in a laptop with a screen size of less than 9 inches.

Under Section IV.B.2, Intel is not prohibited from agreeing with an OEM, ODM, or End User customer that the customer will use distinct model numbers for Intel and non-Intel-based products. Similarly, Intel can agree with its customers that the customer will not falsely label a product based on non-Intel parts as based on Intel parts. The provision allows Intel and OEMs to use naming schemes that are intended to avoid customer confusion. For example, Intel could agree with an OEM that a specific laptop model would be branded Laptop-100A if it uses an AMD CPU and Laptop-100B if it uses an Intel CPU. However, this provision would not allow Intel to condition benefits on an OEM's agreement not to market or brand a product, which is explicitly prohibited by IV.A.3 and IV.A.4.

Under Section IV.B.3, Intel is not prohibited from meeting terms or benefits it "reasonably believes" are being offered by a rival supplier. This section does not immunize the offering of more favorable terms and conditions than those offered by the competitor, *i.e.*, predatory pricing. In addition, this exception is limited in that Intel's offer must be limited to the quantity of the competitive offer; it cannot be conditioned on exclusivity or share of the OEM's or end user's business, and it must be limited to less than a year. Intel may condition its bid upon the purchase of a minimum number of units. For example, if Intel reasonably believes that a

rival supplier is offering to sell 10,000 CPUs for \$90 to an OEM, it can offer to meet that price so long as the OEM agrees to purchase at least 9,000 CPUs.

Sections IV.B.4 and IV.B.5 simply make explicit what is already implicit in the Proposed Consent Order. Under Section IV.B.4., Intel would not violate the Proposed Consent Order merely because it wins all of an OEM's business, so long as it has not engaged in other conduct prohibited by the Order. The fact that an OEM purchases a Relevant Product or Chipset exclusively from Intel would not automatically support a violation of the Proposed Consent Order. Under Section IV.B.5, Intel would not violate the Proposed Consent Order if it engaged in conduct not explicitly prohibited by the Proposed Consent Order.

Under Section IV.B.6, Intel is not prohibited from offering volume discounts directly to purchasers of computers in bidding situations. Intel's offers must be in writing and must be responsive only to single bids and not contingent on future purchases.

Section IV.B.7 would permit Intel to make supply allocation decisions during times of shortage so long as it does not use that process to retaliate against an OEM that is using non-Intel CPUs, chipsets, or GPUs. For example, Intel could not withhold chipset supply from an OEM to punish that OEM for using AMD CPUs.

Section IV.B.8 would allow Intel to enter into no more than ten exclusive agreements over the next ten years when it provides an OEM with "extraordinary assistance" under certain circumstances. The Commission recognizes that Intel has worked with OEMs and other customers to create innovative products that have benefitted consumers. The Commission wants to ensure that Intel has the opportunity to continue to invest monies in projects with OEMs and other customers to support future innovations. Intel, like any other firm, will only invest in research and development if it achieves a return on that investment. Section IV.B.8 recognizes that in "extraordinary" circumstances Intel should be able to negotiate exclusivity for a specific product in which it has invested research and development resources with an OEM or other customer. At the same time, the Commission is wary of creating a loophole to the Proposed Consent Order that can be exploited by Intel to eviscerate the prohibitions in Section IV.A. Thus, this provision is carefully limited.

First, Intel's "extraordinary assistance" to an OEM must be valued at greater than \$50 million and must not be made generally available to all customers. For example, the payment cannot simply take the form of marketing funds that are given to several OEMs but instead must be a unique offer to a particular OEM. Second, the "extraordinary assistance" must be intended to enable a customer to develop new and innovative products or sponsor an OEM's entry into a new market segment where the OEM did not previously compete. For example, a payment of \$50 million to an OEM in return for that OEM's agreement to use Intel's newest CPU in its laptop lines would not qualify as "extraordinary assistance." Third, in return for investing in new product development with a particular OEM, Intel may ask for a period of limited exclusivity of no more than 30 months to recoup its investment. Fourth, Intel would only be able to seek exclusivity for the specific segment or specific product in which it has offered the "extraordinary assistance." For example, if Intel offered "extraordinary assistance" to an OEM to develop a new server it could only seek exclusivity for that particular product line, it could not

seek exclusivity for other servers or other computer products manufactured by that OEM. Fifth, any agreement regarding “extraordinary assistance” must be in writing and include the terms of the assistance, investment, and exclusivity. Finally, Intel would not be permitted to enter into more than 10 arrangements that meet this limited exception over the 10-year duration of the Proposed Consent Order. Exclusive dealing is harmful to the extent that it forecloses an important distribution channel; well-justified exclusive dealing with (on average) just one or two of the Tier 1 OEMs is unlikely to do so.

Section IV.B.9 allows Intel to insist that a Customer maintain the confidentiality of Intel’s confidential business information.

Section IV.B.10 allows Intel to offer buy ten, get one free promotions to its smaller customers. The exception is literally limited to sales of fewer than 11 products. For example, Intel would not be allowed to multiply such an offer a thousand-fold. Thus, this exception would not allow Intel to offer an OEM the opportunity to buy 10,000 units and get 1,000 free.

#### **F. Prohibition on Explicit Predatory Design**

Section V of the Proposed Order would prohibit Intel from designing or engineering its CPU or GPU products to solely disadvantage competitive or complementary products. This provision addresses allegations in the Complaint that Intel engaged in predatory innovation by cutting off competitors’ access to its CPUs and slowing down various connections to the CPU. The Proposed Consent Order would be violated if a design change degrades performance of a competitive or complementary product and Intel fails to demonstrate an actual benefit to the Intel product at issue. For example, Intel could not introduce a design change in its CPU that degrades the performance of a competitive GPU unless it could demonstrate that the design change resulted in an *actual* benefit to Intel’s CPU. The benefit must be real – not simply a theoretical benefit. Nor can the benefit to Intel be simply the fact that the competitive product is rendered less attractive by the design change (and thus enhances the competitive position of Intel’s product).

The burden is on Intel to demonstrate that any engineering or design change complies with the terms of Section V. However, Section V does not require proof that a design change was made to intentionally harm competitive or complementary products, or was otherwise anticompetitive, nor does Section V require a balancing test that would weigh the anticompetitive harms against the benefits of a particular Intel design change; it is sufficient that there be actual benefits. A balancing test would be appropriate in a legal challenge to an Intel design change under Section 5 of the FTC Act or Section 2 of the Sherman Act. As noted earlier, the Commission retains the authority to challenge any Intel design changes that are not prohibited by this provision of the Proposed Consent Order.

## **G. Assurances on the Accuracy of Intel Roadmaps**

The provisions in Section VI address allegations in the Complaint that Intel misrepresented its roadmap to the detriment of competition. Section VI.A would prohibit Intel from disclosing inaccurate or misleading roadmaps for the 10-year duration of the Proposed Consent Order and would require Intel to respond, and do so truthfully, to any inquiries regarding potential roadmap changes for one year after it discloses its roadmap. Section VI.A does not require that Intel disclose its roadmap in the first instance; rather, it places conditions on disclosure in the event that Intel does so. Section VI.B would require Intel to disclose to NVIDIA, on an annual interval, what bus interfaces its platforms will use through 2015.

Together, these provisions address allegations in the Complaint that Intel misled third parties concerning its interface roadmap. Reliable disclosure of Intel's interface roadmap will help to eliminate uncertainty about the availability of connections and interoperability with Intel platforms. With reliable roadmap information, competitors that design, manufacture, or sell products that rely on interconnections with Intel platforms will be able to make informed and confident decisions about resource allocation and research and development efforts. Similarly, Intel customers that receive Intel roadmaps will be able to count on the continuing accuracy of those roadmaps and develop products based on combinations of Intel and non-Intel parts. The provisions would help give NVIDIA, AMD/ATI, and other potential manufacturers of products that would interconnect with Intel's platform, assurances that they will be able to connect with the CPU in the future and will also allow continuing development of GP-GPU computing.

## **H. Compiler Disclosures**

Section VII would require Intel to take steps to prevent future misrepresentations related to its compilers and libraries, which are used by software developers to write software and make it work efficiently. Intel's compilers and libraries, however, may generate different software code depending on the vendor of the CPU on which software is running. For example, when the software code runs on an Intel-based computer, it may use certain optimizations such as advanced instruction sets or faster algorithms. However, when that same software code runs on a non-Intel-based computer that has the same optimizations, it may not use those optimizations. Intel's compilers and libraries thus may disable functionality and performance available on non-Intel CPUs. The disclosure requirements in Section VII provide software developers with non-misleading information regarding the extent to which Intel's compilers and libraries optimize differently for different vendors' CPUs. These disclosures allow software developers to make more informed decisions about their use of Intel compilers and libraries, such as whether to investigate the types of optimizations disabled on non-Intel CPUs, whether to use any methods to override the code dispatch mechanisms in Intel compilers and libraries, and whether to use Intel compilers and libraries at all.

Section VII applies to Intel "Compilers," which includes all Intel compilers, runtime libraries supplied with those compilers, and other libraries supplied by Intel for use with Intel and non-Intel compilers. Libraries are pre-compiled code or sample code provided to software developers for use in their programs. Because Intel could implement CPU vendor-based code

dispatching in either compilers or in libraries, the disclosures required in Section VII must apply to both.

Section VII.C of the Proposed Order requires Intel to inform its customers when and how its compilers and libraries optimize for Intel processors but not for non-Intel processors that are capable of using such optimizations. If Intel's compilers or libraries optimize for a standard instruction, such as SSE3, only for Intel CPUs but not for compatible AMD or Via CPUs, even in some circumstances, Intel must clearly and prominently disclose the extent to which the standard instruction set is not used and which instruction set is used instead. Section VII.C would also require Intel to disclose when its compiler performs other optimizations only on Intel CPUs but disables the same features on other CPUs that support the features.<sup>5</sup>

Intel also would be required under Section VII.D to notify its customers and implement an Intel Compiler Reimbursement Program that includes a \$10 million reimbursement fund from which Intel would reimburse customers who relied on Intel's statements regarding its compilers or libraries for the costs associated with recompiling their software using non-Intel compiler or library products. A customer seeking to use the Intel Compiler Reimbursement program must describe an Intel statement on which it relied to ensure that the program is used by customers who were misled by Intel's disclosures.

Section VII.E of the Proposed Consent Order prevents Intel from making claims about the performance of its compiler unless Intel has substantiated that those claims are true and accurate using accepted analytical methods. This prohibition seeks to prevent Intel from claiming, without substantiation, that its compiler and libraries are superior to other available compilers and libraries. Intel may not claim to have superior compilers and libraries for AMD CPUs, when other products, such as the GNU C Compiler (GCC) or AMD's Core Math Library (ACML) have better performance in some circumstances. This prohibition is particularly important regarding Intel's representations about performance of its compilers on non-Intel CPUs. This section ensures that Intel will provide the appropriate disclosures when it makes performance claims about its compilers and libraries.

## **I. Benchmark Disclosures**

Section VIII would require Intel to make disclosures concerning the reliability and relevance of performance claims based on benchmarks. The provision requires Intel to notify any customers, whether hardware manufacturers or end consumers, that the performance tests may have been optimized only for Intel CPUs. Intel must make disclosures whenever it makes performance claims comparing its CPUs to competitors' processors and whenever it relies on a benchmark. The provision requires disclosures in all advertising or marketing materials that include performance claims, including presentations, audio-visual advertisements, and in prominent locations regarding performance on Intel's web site. The required disclosure will inform consumers and OEMs that certain benchmarks may not provide accurate performance comparisons with non-Intel CPUs. The provision will encourage consumers and OEMs to use benchmark results carefully and rely on multiple benchmarks in order to get accurate

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<sup>5</sup> Although compiler users will not know which precise optimizations are not available on non-Intel CPUs, they will be on notice that their compiler will not fully optimize for non-Intel CPUs.

performance information about CPUs. The provision will thus help provide for more informed purchasing decisions.

## **J. Compliance Terms**

Sections IX through XIII of the Proposed Consent Order contain reporting, access, and notification provisions that are common in the Commission's orders, and are designed to allow the Commission to monitor compliance with the Proposed Consent Order. Section IX permits the Commission to appoint Technical Consultants to assist in assessing Intel's compliance with several provisions of the Proposed Consent. Such consultants are warranted in light of the technical nature of the products at issue and the potential complexity of some compliance issues, including cost accounting, microprocessor design, and software design. Intel would be required to pay for the Technical Consultants, up to a total of \$2 million during the ten-year period of the Proposed Consent Order.

Section X would require Intel to submit to the Commission a written plan explaining what Intel has done and will do to ensure compliance with the Proposed Consent Order. Intel would also be required to submit annual reports for six years explaining how it has complied with the Proposed Consent Order. Intel would be required, in these reports, to submit to the Commission any communications Intel receives from its customers regarding compliance with the Proposed Consent Order, including complaints that it is violating the Proposed Consent Order.

Sections XI and XII would require Intel, for the next five years, to retain its written sales contracts and to allow the Commission access to Intel's records and employees. Section XIII would require Intel to notify the Commission at least thirty days prior to changes in corporate structure that would impact Intel's compliance provisions, such as Intel being purchased by another company or Intel creating or purchasing corporate subsidiaries.

Paragraph XIV provides that the Proposed Consent Order shall terminate ten (10) years after the date it becomes final.