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**Letter from the publisher:** A Touch of Texas…by Mark Fihn

**Touch  Gesture  Motion– Line-up**

**Speaker and company summaries**

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The **Touch Panel** is focused on bringing news and commentary about the activities of the companies and technologies related to touch screens and related technologies for the displays industry. The Touch Panel is published electronically 10 times annually by Veritas et Visus, 3305 Chelsea Place, Temple, Texas, USA, 76502. Phone: +1 254 791 0603. [http://www.veritasetvisus.com](http://www.veritasetvisus.com)

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Subscription rate: US$47.99 annually. Single issues are available for US$7.99 each. Copyright 2011 by Veritas et Visus. All rights reserved. Veritas et Visus disclaims any proprietary interest in the marks or names of others.
We live in a world where the electronics industry is dominated by Asian manufacturers (and increasingly, by Asian consumers). And I heartily applaud the capabilities – both intellectual and financial – that Asian companies, Asian educational institutions, and Asian governments have undertaken to help assure an ongoing supremacy in the electronics industry. Still, it’s sad to me to watch as American and European innovators seem largely incapable of creating technologies that end up being manufactured locally.

One of the reasons we decided to hold the Touch Gesture Motion Conference in Austin, Texas, was because of the relatively large number of companies involved in the industry located in the Texas area. This seemed like a good way to find quality speakers, as well as to help showcase what all is going on in Texas. So, we expected to end up with a sizable number of representatives from Texas. What we did not expect was that we do not have a single speaker from an Asian company at this event. And that’s not because we didn’t invite speakers from Asia – it’s simply because a huge portion of the innovation going on in the industry is occurring in North America and Europe.

The red dots represent the headquarters location for each of the companies represented at this event. Remarkably, we have no speakers from Asia. Texas, California, and Israel represent hotbeds of innovation in the area of touch, gesture and motion.

The big question, of course, is whether all this innovation will stay in North America and Europe, or if it will move, as virtually all of the electronics industry to date, to Asian manufacturing – and then to Asian innovation and forward-looking development. In all likelihood, production will mostly be in Asia, particularly since there’s little chance that system-level device manufacturing will shift away from Asia. Still, there’s currently a possibility, that with continued innovation, along with some favorable support from academic and governmental bodies, that maybe, just maybe, the future world of touch, gesture, and motion will continue to see jobs and opportunities in North America and Europe.

The Touch Gesture Motion Conference will be a fascinating peak into the technologies that are reshaping the world of electronics – impacting all of our lives. See you there!
Touch • Gesture • Motion

Line-up

Wednesday, December 7, 2011: 8:30 a.m. – 9:30 p.m.

+ Introduction: Mark Fihn, Publisher, Veritas et Visus – Conference Coordinator

+ Keynote: “The State of Touch Technologies: Educational Opportunities and Challenges”:  
- Paul Resta, Director, Learning Technology Center, The University of Texas at Austin

+ Session 1: Touch Technologies  
- Geoff Walker, Principal Analyst, IMS Research  
- John Feland, CEO and Founder, Argus Insights  
- David Carey, Vice President, Technical Intelligence, UBM TechInsights  
- Zachi Baharav, Senior Researcher, Corning  
- Gerry Seidman, CEO and Founder, Tactonic Technologies  
- Bob Senior, President, isiQiri Interface Technologies  
- Gary Baum, AVP Product Marketing, N-trig

The session concludes with a moderated panel discussion led by industry notable, Al Davis.

+ Greeting: Ross Young, Sr. Vice President, IMS Research

+ Keynote: “Captivating Mobile Consumers through Compelling Combinations of Voice and Touch”  
- Mike McSherry, Founding CEO of Swype, Nuance Communications

+ Session 2: Touch Applications  
- Michael Woolstrum, Co-founder and CEO, Touch International  
- David Nolte, Senior Vice President of Engineering, Ocular  
- Ola Wasswik, Co-founder; Vice President of Engineering, FlatFrog  
- John Doherty and Mike Stinson, Co-founder, Motion Fellow / VP Marketing, Motion Computing  
- Gerald Morrison, External Research Manager, SMART Technologies  
- David Potter, Commercial Director, Interactive Product Solutions

The session concludes with a moderated panel discussion led by industry veteran, Dan Doyle.

+ Session 3: Special Session  
- Dan Van Ostrand, Founder; SVP Research & Development, Unipixel  
- Francois Jeanneau, Director of Sales & Business Development, Stantum  
- Rusty Stapp, Director of Major Accounts, Next Window  
- Jay Esfandyari, MEMS Product Marketing Manager, ST Microelectronics

The session will conclude at about 6:00 p.m. and will be immediately followed by a networking cocktail reception with finger foods.

Thursday, December 8, 2011: 8:30 a.m. – 5:00 p.m.

+ Introduction: Mark Fihn, Publisher, Veritas et Visus – Conference Coordinator

+ Keynote: “The Future Beckons”:  
- Jonathan Epstein, President, Omek Interactive

+ Session 4: Gesture/Motion Technologies  
- Paul Erickson, Senior Analyst, IMS Research  
- Jeff Bier, President, Founder of Embedded Vision Alliance, Berkeley Design Technology, Inc.
- Bill Curtis, Senior Fellow, AMD
- Dave Rothenberg, WW Marketing and Communications Manager, Movea
- Navin Natoewal, General Manager, Media Interactions Group, Philips
- Dan Simpkins, CEO and President, Hillcrest Labs
- Jerry Koontz, Director of Marketing, TAOS

The session concludes with a moderated panel discussion led by industry visionary, David Barnes.

+ Greeting: Ian Weightman, President, IMS Research

+ Session 5: Gesture/Motion Applications
- Michael Klug, Chief Technology Officer and co-founder, Zebra Imaging
- Kurt Hoffmeister, Vice President R&D, co-founder, Mechdyne
- Roy Ramati, VP Marketing/Sales, Extreme Reality
- Tom Armbruster, Vice President, Sales, Oblong Industries
- Francis MacDougal, Senior Director, Technology, Qualcomm
- Gideon Schmuel, CEO, eyeSight
- Jonathan Josephson, IP Founder, Quantum Interface
- Yoav Hoshen, Senior VP, Business Development, PointGrab

The session concludes with a moderated panel discussion led by technology expert, Mark Lucente.
Touch • Gesture • Motion Conference
December 7-8, 2011
Austin, Texas

Exploring the Future of Touch, Gesture & Motion Technologies

About TGM 2011
Touch-Gesture-Motion 2011 is the first event of its kind covering the various ways the human machine's computer interface is evolving using touch, gesture and motion technologies featuring presentations, case studies and panel debates from industry leading experts and visionaries.

Day 1-Touch-December 7
Opening Keynote-State of Touch Technologies
Session 1-Exploring the Future of Touch Technologies
Afternoon Keynote New Trends in Interactivity
Session 2-Evolution of Touch Applications

Day 2-Touch-December 8
Opening Keynote-How Gesture & Motion will Shape the Future
Session 3-The Future of Gesture & Motion
Afternoon Keynote -Impact of Gesture & Motion on the OS
Session 4-The Future of Gesture & Motion Applications

Visit www.touchgesturemotion.com for more information and to register for the conference or contact Bob Perez at bob.perez@imsresearch.com or call +1.512.302.1977

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Speakers from IMS Research

IMS Research is a leading independent supplier of market research and consultancy to the global electronics industry. We offer syndicated market studies, bespoke client research and consultancy services. From wireless communications to consumer and security, we help our clients better understand markets and shape strategies. Supported by a strong and proven track record, we work with clients in over 50 countries. Innovative and dynamic, we continue to seek out new ways to develop and meet our clients’ needs.

IMS Research at Touch Gesture Motion 2011 - IMS Research will be well represented at the inaugural Touch Gesture Motion Conference including presentations or introductions from:

Ian Weightman - President
Ian Weightman is the president of IMS Research. Having been involved with IMS Research since its foundation, Ian has extensive experience across the company, and is a long-standing member of the IMS Research Board of Directors. Ian is based in the company’s US headquarters in Austin, Texas, and oversees many of the company’s research groups as well as having executive management responsibility for the IMS Consultancy team and company's Conference Division. Ian has built a reputation as an insightful consultant, helping companies to improve their profitability by finding and developing new markets for their products. This will continue to be a focus area for Ian, who also has 17 years of experience in market analysis. He has authored numerous IMS reports including set-top boxes, digital television, home networks, semiconductors and sensors, as well as creating databases for set-top boxes, televisions and broadband access. Ian is a frequent speaker and moderator at conferences, and has presented at ANGA, the Bluetooth Summit, CES, Digital Hollywood, CSTB Moscow, IP Trends, SID, SMPTE and TV3.0. Ian holds a degree in electrical and electronic engineering from Aston University, England.

Ross Young - Senior Vice President
Ross Young joined IMS Research in November 2009 through IMS Research’s acquisition of Young Market Research which he co-founded in May of 2009. Prior to forming YMR, Young was VP of New Market Creation at Samsung Electronics’ LCD Business, reporting to the LCD CEO, where he tracked, analyzed and assessed the solar market and supported their market intelligence efforts in notebook PCs and TVs. Prior to Samsung, Young was the founder and CEO of DisplaySearch, the leading flat panel display market research, consulting and events firm. Young ran DisplaySearch from 1996 to 2007 and launched most of their product areas and many of their most popular reports on such topics as TVs, monitors, notebooks, large-area displays, glass substrates, production equipment and supply/demand. He sold DisplaySearch to The NPD Group in Sept. 2005. Prior to DisplaySearch, Young held marketing positions at OWL Displays, Brooks Automation, Fusion Semiconductor and GCA in the driver IC, automation, resist removal and lithography markets respectively for flat panels and semiconductors. Young also authored a book published by the University of Texas on US-Japan competition in the semiconductor and semiconductor equipment industries entitled Silicon Sumo, has appeared as a display analyst on NBC's The Today Show and other news programs and has been quoted in most business publications.
Geoff Walker - Principal Analyst

Geoff, Walker has more than 20 years of experience with touch technologies, prior to IMS Research he was most the Marketing Evangelist and Touch Industry Guru at NextWindow, a supplier of optical Touch Screens. Prior to that, he was Global Director of Product Management and Business Development for Elo TouchSystems, a $400M manufacturer of Touch Screens, Touch Monitors and Touch Computers. Previously Geoff operated his own consulting business for seven years (Walker Mobile, LLC, focusing on Touch Screens, displays and mobile computers), and has also worked for Handspring, Fujitsu Personal Systems, GRiD Systems and Hewlett-Packard. A widely-published author with more than 50 articles on Touch, Geoff is a frequent speaker at Display and Touch industry conferences giving 10 talks in the last 18 months. Geoff holds BS-Electrical Engineering and BS-English degrees from the Polytechnic Institute of New York University and is an active member of the Society for Information Display (SID).

Paul Erickson - Senior Analyst

With over 10 years of technology industry experience, Erickson’s experience has centered on consumer electronics, pay & broadcast TV, and digital content, including DVD and Blu-ray Disc, digital delivery, HD broadcasting and services, digital set-top boxes, IPTV, and digital rights management. In his role at IMS Research, Erickson focuses on topics such as premium pay-TV content, Internet-delivered video, connected TVs, pay-TV operator ecosystems, and digital set-top boxes. Prior to joining IMS, Erickson was most recently the Director of DVD and HD Market Research at DisplaySearch / NPD Group, and was featured at the 2009 International CES as an expert panelist speaking at the Blu-ray Disc Association press conference. Additionally, he has performed competitive analysis and strategy within the software industry for IBM and Vignette Corporation, as well as consulted on a number of independent projects for Dell, Compaq, Silicon Graphics and AT&T. He has been quoted in a variety of industry publications and news outlets, including USA Today, the Wall Street Journal, Associated Press, the BBC, NPR, New York Times, Los Angeles Times, CNN, BusinessWeek, Variety, Bloomberg, Wired, Home Media Magazine, PC World, CNET, Video Business, CE Pro and Cable & Satellite International. He holds a B.S. in International Business from Georgetown University, an M.B.A. in Marketing from the University of Texas at Austin, and can converse in English, Spanish, German, Mandarin and Taiwanese.

Describe the most important things IMS Research is working on related to touch, gesture and motion:

IMS Research is hard at work on a new report titled, “Next Generation User Interfaces: Touch, Gesture Motion & Voice – World – 2011.” The report will aim to answer questions such as, will “controller-less” technology replace controllers for everything? Will gesture and motion fragment into 10+ technologies as in the touch world? Are “near-field” gestures going to be important?

“Next Generation User Interfaces: Touch Gesture Motion & Voice” provides a current analysis of the technologies transforming the human-machine-computer interface as well as a concise explanation of touch, gesture, motion and voice control advances and a cost/benefit analysis and tradeoffs of each. Key markets such as factory automation, automotive, security, mobile tech, education, digital signage and consumer electronics will be discussed. Barriers to entry for each technology will also be discussed as well as the TAM for emerging markets. This report is a must read for anyone interested in understanding this quickly evolving industry. For more information, contact Paul Erickson at paul.erickson@imsresearch.com.
Speaker and company summaries

Morning Session: December 7, 2011 – Touch Technologies

Keynote Speaker #1: “The State of Touch Technologies: Educational Opportunities and Challenges”

Paul Resta, Ruth Knight Millikan Centennial Professorship
Director, Learning Technology Center, University of Texas at Austin

Dr. Paul E. Resta holds the Ruth Knight Milliken Centennial Professorship in Instructional Technology and serves as Director of the Learning Technology Center at the University of Texas at Austin. His current work focuses on the research and development of web-based learning environments, computer-supported collaborative learning strategies and tools, and online teacher professional development.

He served as President of the International Council of Computers in Education and is the Founding President of the International Society for Technology in Education. He currently serves as President of the International Jury for the United Nations Educational, Scientific and Cultural Organization (UNESCO) King Hamad Bin Isa Al-Khalifa Prize for the Use of Information and Communication Technologies in Education. He also serves as Chair of the Association for Teacher Educators National Commission on Technology and the Future of Teacher Education.

Resta has received a number of awards including The Society for Information Technology in Teacher Education (SITE) Lifetime Achievement Award; the U.S. Distance Learning Association Award for Outstanding Achievements in Higher Education; Electronic Learning Magazine’s Educator of the Year Award; and The U.S. Department of Education’s National Institute of Education Award for Outstanding Leadership in Furthering Educational Research.

He serves on national and international advisory boards, including: Chair of the National Laboratory for Education Transformation, International Laboratory of Advanced Education Technologies, and the Conference Chair of the 2012 Society for Information Technology in Teacher Education’s International Conference. He has produced numerous articles, book chapters, and books on educational technology. Recent books include: Toward Digital Equity: Bridging the Divide in Education, Allyn and Bacon; Information and Communication Technology in Teacher Education: A Planning Guide, UNESCO (book translated into seven languages); Teacher Development in an E-Learning Age, UNESCO, in press.

Abstract: “The State of Touch Technologies: Educational Opportunities and Challenges” – Although touch, gesture, and motion technologies (TGMT) have transformed gaming environments, we are just beginning to understand their effective application to education. TGMT can be used to recreate or enhance existing educational practices, but their greatest benefit may be to create entirely new contexts and modes of learning. Recent research on embodied cognition is demonstrating that the environment and bodily experience affect higher cognitive processes. Thus, touch technologies, coupled with virtual worlds, offer opportunities to create more authentic
contexts, tasks, and tools for learning. For example, they may enable students to perform precise manipulations similar to those done in a biology, chemistry, or electronics lab or provide exploratory experiences, involving real physical effort, such as climbing to the top of a Mayan pyramid. The opportunity to capture every action of the learner using these technologies will result in massive educational data sets requiring new modes of analysis and visualization to understand and predict the learner’s performance and progress. The effort to harness the potential of touch technologies to transform education will require close collaboration between developers, educators, and researchers.

John Feland, Founder and CEO, Argus Insights

John Feland is the founder and CEO of Argus Insights, the leader in user-driven product insights. In 2009 and 2010, Feland was the Executive Director for Stanford University’s ME310 Design Innovation course. In 2008, Feland served as Chief Technologist for SK Telecom America’s R&D Group. Prior to SKTA, Feland led Synaptics’ marketing division to help handset manufacturers integrate next-generation capabilities. Feland was the principle architect for the Onyx Concept Phone, the world’s first capacitive multi-touch mobile experience. Feland holds an S.B. in Mechanical Engineering from MIT, an M.S. in Mechanical Engineering from Stanford University, and a PhD in Mechanical Engineering from Stanford University.

Abstract: “Product Analytics Derived from User-Based Signals in Social Media” – How do you differentiate your product and win in a multi-billion dollar market? Despite the type of touch technology, user experience drives purchase behavior. The digital format of product promotion and user feedback provides a valuable source of product-based data for product developers and marketers. When you understand dynamic user expectations, you can lower the risk of innovation and create devices that consumers will buy. Find out what users are sharing about their interactive experiences for the tablet, smartphone, and eReader markets over time. Questions to be addressed include:

- Which experiences and applications drive purchase behavior?
- Do consumers expect haptic feedback? Do they even like it?
- What about the gesture experience is catching on?
- What is the relation of the touch experience to the display and graphics?

Company summary: Imagine you are responsible for developing the next hot touchscreen device. There are already products on the market, but it’s going to be a multi-billion dollar industry and your company wants to be there. You must place your bets on the right mix of features, messages, channels, and components to meet consumer expectations. What if you knew which features were delivering a pay-off and which ones the competition has yet to master? What if you knew how to take action when users show delight or disappointment in days after retail launch? You can, and in real time. Argus Insights provides the first web-based platform for user-driven product innovation. It’s called Consumer Innovation Analytics—CIA.

Describe the most important things that Argus Insights is working on related to the future of touch, gesture, and motion: Argus Insights core belief is that user experience correlates to product success. Our platform, Consumer Innovation Analytics (CIA), augments traditional market research with real-time product experience insights to help product development and marketing teams follow who’s winning in the market and why. When we evaluate the features and experiences that matter most to consumers, we have a more holistic view of what it means to meet consumer expectations for human-device interaction.
David Carey, VP Technical Intelligence, UBM TechInsights

David Carey’s focus is on UBM TechInsights’ leadership in technical intelligence initiatives with an emphasis on market-leading Teardown Analysis for a global served client base. David has over 25 years of experience in technology benchmarking, manufacturing processes, system design, and technical cost analysis. He is also a Contributing Editor for EETimes, authoring many of the media group's "Under the Hood" columns. Before TechInsights' 2007 acquisition of Portelligent he served as that company's co-founder and President. David graduated cum laude with a B.S. and M.S. degree in Electrical Engineering from Texas A&M University in 1983 and 1985 respectively, and is a member of Tau Beta Pi, Eta Kappa Nu, and IEEE. He is the named inventor on over 15 US and European patents.

Abstract: "Touch/Gesture/Motions-sense Technology in End-Product; Tales from the Teardown Crypt" – Consumers are rapidly jumping on the bandwagon for touch-capable and multi-sensing devices. In what is arguably a mass-market ignited by the first Apple iPhone, the cell phone and other consumer/wireless devices have matured touch, gesture, and motion (TGM) technologies from long-standing niche applications to mainstream status. This talk will focus on the end-system implementation of a range of touch and motion sensing technologies in Consumer Electronics as revealed by teardown analysis. The talk will focus on the current state of TGM device technologies as revealed in detailed teardown analysis, the integration of TGM into end-products and cost impact, and the enabling consumer experiences these advances have brought - and will bring - to the everyday user.

Company summary: UBM TechInsights is the leading provider of sophisticated information and advice to technology companies. We assist in the management of technology and intellectual property (IP) portfolios and optimizing client risk/reward on investment over the entire IP/Technology Lifecycle, from Technology and Market Assessment to IP strategy and monetization. UBM TechInsights’ Technology Assessment activities include Teardown Analysis of products in the wireless, mobile, and consumer electronics space where a range of touch, gesture, and motion technologies have brought advanced product interaction models to the end-user.

Describe the most important things that UBM TechInsights is working on related to the future of touch, gesture, and motion: Helping clients track the components, costs, systems, intellectual property, and strategies for the use of touch, gesture, and motion technologies in consumer electronics.

Zachi Baharav, Senior Researcher, Corning

Zachi Baharav graduated from the Technion, Israel Institute of Technology in 1998 with a doctorate in electrical engineering. He spent the next nine years working at HP/Agilent on a variety of projects including digital cameras and microwave imaging. He then moved to Synaptics where he led the exploratory research group and was introduced to the world of touch sensing. After a short stint teaching high school math, Zachi joined Corning’s West Technology Center located in Palo Alto, California where his role includes research and business development. Zachi is the author of more than 30 U.S. patents and is a senior member of the Institute of Electrical and Electronics Engineers (IEEE). When not spending time with his family or at work, Zachi can be found running on the wonderful trails around the bay area.

Abstract: “A Day Made of Glass” – A vision for an enabled future: challenges and opportunities – Corning’s “A Day Made of Glass” video was posted to YouTube.com in February, 2011. Since then, it has been viewed more than 15 million times, received more than 8,000 comments, and about 43,000 ‘likes!’ The vision depicted in the video resonated with many viewers as it describes a not-too-far-away future that is very optimistic in nature and promises to make our lives easier. The vision proposed in “A Day Made of Glass” poses many challenges, both
technological and of a wider scope. In this presentation, we will cover various aspects of this issue ranging from the front end user interface, enabling technologies and the whole ecosystem needed to make it a reality.

**Company summary:** Corning Incorporated is the world leader in specialty glass and ceramics. Drawing on 160 years of materials science and process engineering knowledge, Corning creates and makes keystone components that enable high-technology systems for consumer electronics, mobile emissions control, telecommunications and life sciences. Our products include glass substrates for LCD televisions, computer monitors and laptops; ceramic substrates and filters for mobile emission control systems; optical fiber, cable, hardware & equipment for telecommunications networks; optical biosensors for drug discovery; and other advanced optics and specialty glass solutions for a number of industries including semiconductor, aerospace, defense, astronomy and metrology.

Describe the most important things that Corning is working on related to the future of touch, gesture and motion: As conveyed in the recently popularized “A Day Made of Glass” video, Corning has a strong vision of a connected world of the future, in which touch and interactivity are integral to seamless delivery of real-time information. Corning is working closely with many companies across the ecosystem to deliver technologies that can make this vision a reality. Our specialty glass solutions, particularly Corning Gorilla Glass, can enable the types of unique surfaces ideally suited for optimal touch responsiveness, optical clarity, and durability. Corning’s high-quality EAGLE XG and Lotus glass products provide the substrates for display screens of all sizes, and, our world-leading optical fiber and wireless network solutions, deliver the bandwidth needed to power these advanced surfaces and devices of the future.

**Touch Gesture Motion** will host a small exhibition area at the event including the following participating companies:
Gerry Seidman, CEO and Founder, Tactonic Technologies

Gerry Seidman is CEO of Tactonic Technologies which develops pressure sensing Multi-Touch and pressure imaging components, products and solutions from traditional touchpad sizes to arbitrarily large form factors using their proprietary seamlessly tileable sensor technology. Mr. Seidman has more than 25 years experience both developing technology for and managing startups in areas spanning computer graphics, user interfaces, CAM, distributed systems and mobile. In the mid ‘90s, his interest in the question of what would be needed to develop applications that allowed people to concurrently work together beyond simply screen led to his forming Internet Access Methods/IAM, which developed a suite of Real-Time Interactive Collaborative User Interface and Distance Presentation tools and frameworks.

Abstract: “Pressure Sensing Touch Surfaces” – The added dimension of pressure greatly increases the vocabulary of multi-touch gestures, but pressure is largely ignored due to the lack availability of cost effective devices that support it. Similarly, there is a large vocabulary of bi-manual gestures that could benefit from larger touchpads, such as across the full bezel of a notebook computer or as an external peripheral. In this talk we will discuss how pressure sensing multi-touch surfaces and large format surfaces fit in the mix of current touch technologies. Things will also get ‘out of hand’ and we will discuss uses of surface pressure imaging on floors, computer games and in industrial applications.

Company summary: Tactonic Technologies provides Multi-Touch and Pressure Imaging components, products and solutions based on our proprietary Tactonic Sensor technology. Tactonic sensors are high-resolution, pressure sensitive devices capable detecting pressure influenced gestures without the use of special pens. These devices can be integrated into laptops; external peripherals; consumer and industrial devices. Tactonic sensors cost effectively and seamlessly scale to arbitrarily large form factor, such as for use in interactive whiteboards.

Tactonic sensors are effectively a ‘video camera’ for surface pressure. Floor based Tactonic Sensors can be used to track highly detailed foot placement, leaning, toe-heal shifts, etc. allowing for free movement over a large area while providing detail and frame rates unattainable by depth camera. These floor based sensors can be used as game controllers allowing for single or multi-user game/dance/exercise interaction or for use in people tracking/identifying security or market intelligence applications.

Describe the most important things that Tactonic Technologies is working on related to the future of touch, gesture, and motion: While touch technologies have been around for a long time, the current generation of phones, tablets and computers has set the standard of what people expect when interacting with computers, devices and their environment. Additionally, Kinect, Wii/WiiFit and Move have introduced hand/body/foot gestures to masses. We are at the cusp of a wave of pervasive computing technologies that will bring us beyond the keyboard/screen concept of computers interaction to a world that fuses touch, vision, foot tracking and voice into a seamless interface with our environment. By creating cost effective multi-touch and pressure imaging sensors in any form factor, large or small, Tactonic Technologies envisions a near future where, for a small incremental manufacturing cost, any surface, floor or product could be capable of responding touch and pressure influenced gestures.
Bob Senior, President, isiQiri Interface Technologies

Bob Senior is President of isiQiri US. An international business development expert, Bob has more than two decades of operational experience in the sphere of advanced man machine interfaces. He has founded and served in executive management positions in public and private touch-screen companies world-wide, and has an outstanding track record in initiating, developing, and closing B2B business in the global technology sphere. An experienced board director, Bob has served on the board of several successful international companies including FlatFrog Laboratories, digitalvision Ltd (acquired by Getty Images) and Trunk Archive. Bob was Executive Vice President, Noise Limit Inc, CEO at Taktio A/S (now FlatFrog), Co-founder and Managing Director of Touch International, Vice President WW Sales MicroTouch Inc, Managing Director and Vice-President (EMEA), MicroTouch Systems Ltd (acquired by 3M touch systems). Bob has also worked in senior positions at Apple, NCR and Poqet Computer. He holds a B.Ed/Physics degree.

Abstract: “The battle for our living rooms” – Bob’s talk looks back at the growth of touch and use of gestures leading to what Bob calls the socialization of touch. Bob will discuss some of the technologies, existing and emerging, that could be fighting for our attention and space in our living room’s over the coming years and will attempt to provide a perspective of potential user needs that might drive adoption.

Company summary: isiQiri interface technologies is an early stage company with offices in Hagenberg Austria and San Jose California, bringing new standards to the large format man machine interface market. Its Q-Foil technology, protected by 14 patent families, is a unique position sensitive polycarbonate film which forms the basis of a number of products. Q-Screen facilitates multi-user laser interactive projection screens up to iMax in size. Q-Frame, a range of large format, true multi-touch touch screens from 40” to 200” based on the technology will be available from mid-2012 offering the market superior price performance. Finally, Q-Scope a multi-user, interactive absolute pointing system incorporating gesture control to facilitate the rapidly expanding Smart TV segment.

Describe the most important things that isiQiri is working on related to the future of touch, gesture, and motion: Bringing a unique combination of innovative, cost effective technology and practical application to facilitate the next generation of large format multi-touch touch screens, interactive whiteboards and Smart TVs.

Gary Baum, AVP Product Marketing, N-trig

Gary Baum joined N-Trig as associate vice president of marketing, bringing with him over 25 years of experience in leadership positions within the consumer electronics, computer and semiconductor industry. Mr. Baum has applied his leadership skills towards a wide range of businesses, from various startups to major Fortune 500 companies. Prior to N-trig, he served as creator and director of AMD’s notebook processor business where he drove revenue from zero up to more than $300M annualized. As a founding team member at S3, Mr. Baum worked to shape its Windows graphics accelerator strategy that drove S3 into a successful IPO. Mr. Baum holds multiple CPU and system design patents and is credited with numerous publications and conference contributions. A BSEE graduate of the University of Miami, he completed post graduate work in the fields of computer science, marketing and system control theory.

Company summary: N-trig DuoSense offers a complete solution to the ever-increasing demand for productivity on the move, utilizing pen capabilities for greater levels of interactive creativity, and advancing basic touch consumption to a much greater potential for simultaneous input, for a true Hands-on computing experience. Supporting various Windows, Linux and Android distributions, DuoSense can be implemented across a wide
variety of form factors, including slates, netbooks, tablets and desktop replacements, supports all LCDs and a wide variety of industrial design options for mobile products, and keeps devices slim and light. N-trig has offices in Israel, the US, Taiwan, China and Japan.

**Describe the most important things that N-trig is working on related to the future of touch gesture and motion.** The last few years have seen a significant growth in the usage of tablet computers among users who cherish the devices for their mobility, speed and user-friendliness. However, it has become clear that the touch screen interface is most suited for content consumption, limiting potential applications in the enterprise and education markets. Leading device manufacturers are responding to this challenge by implementing a combination of multi-touch capabilities and pen (stylus) input in the next generation of tablets - a simple but significant move that will transform these devices into tools for active content creation and productivity. The combination of pen and multi-touch input enables a more personal, intuitive and Hands-on computing experience, allowing users to manipulate items and write on the screen as easily as taking pen to paper. Pen plus touch instantly converts the tablet into a sketchpad, easel, notebook and a collaborative business tool, allowing for precise drawing and designing, on-screen editing, document-signing and quick, searchable notes, as well as facilitating long-distance collaboration -- all in a mobile computing environment. N-trig is dedicated to providing the definitive pen and multi-touch user experience for consumers and professionals, in industries ranging from architecture, graphic arts and sales to accounting, healthcare and education. The company is integrating pen and multi-touch capabilities into a seamless user experience - one that feels natural. N-trig are also creating a user interface that is both intuitive and exact, allowing for use of more fingers with a higher accuracy rate, and features enhanced palm rejection – making the experience of writing with the pen on-screen almost as identical to writing on paper. N-trig is also working closely with software vendors (ISVs) to create seamless pen integration with the goal of improving the user experience, focusing on collaborative user needs, and refining handwriting recognition applications. Ultimately, together with our partners, N-trig aims to enable a consistent and elegant user experience. Solutions such as N-trig’s DuoSense create clear opportunities for OEMs and software developers to differentiate and compete in the increasingly crowded tablet computing space. By providing a single pen and multi-touch solution that is precise, smooth and seamless, N-trig offers the productivity required by the enterprise segment - enhancing the user experience without compromising on mobility.

**Al Davis, Independent Consultant**

Al Davis has over 25 years of experience in display and projection systems sales. Mr. Davis has recently finished a three-year engagement as Senior Consultant with Kent Displays. In those three years Mr. Davis was instrumental in repositioning Kent’s marketing message to be more direct and customer orientated; and doubled sales for their existing product lines. Previous to this assignment Mr. Davis was Vice President of Business Development for display technology IP licensor Clairvoyante, where he headed all sales, marketing and business development activities. Samsung purchased Clairvoyante in 2007. Mr. Davis was Vice President of Sales and Marketing for display/microdisplay manufacturer Three Five Systems. At Three-Five, Mr. Davis oversaw the company’s interaction with RCA in the development and introduction of the SCENIUM 5000, the first LCOS based rear projection HD television. Mr. Davis pioneered the microdisplay technology market as Vice President of Sales and Marketing with S-VISION, which was purchased by Three-Five. Previous to S-VISION Mr. Davis was Senior Director of Displays and Projectors for Fujitsu Microelectronics, where he successfully introduced Plasma based televisions to the US market, and was responsible for the introduction of the first 1000 lumen front business projector. Mr. Davis served as General Manger, National Sales Manager for Carroll Touch, the first commercial touch input supplier. Mr. Davis began his career in marketing and sales with IBM. Mr. Davis served as an officer in the United States Marine Corps, where among his responsibilities were those of Redeye and Hawk missile platoon and section leader. Mr. Davis received his Bachelor in Business Administration from the University of Georgia and a Master of Arts degree from Pepperdine University.
Afternoon Session: December 7, 2011 – Touch Applications

Keynote Speaker #2: “Captivating Mobile Consumers through Compelling Combinations of Voice and Touch”

Mike McSherry, Founding CEO of Swype, Nuance Communications

Abstract: “Captivating Mobile Consumers through Compelling Combinations of Voice and Touch” – With the advent of touchscreens phones and tablets, the way we engage and interact with our mobile devices has changed dramatically. Where many once pecked short notes on 9-key and hard QWERTY keypads, we now see consumers all over the world effortlessly gliding their fingers across screens or simply gesturing. And, we’re seeing many more speaking to their devices in natural language to send an email, text message, update a Twitter status, or find information on the web. Yet – we’re simply just seeing the first iterations of what’s truly possible, with the evolution of not only devices, but the cloud. Mike McSherry of Nuance Communications, and founding CEO of Swype, will discuss this fascinating evolution of touch and voice technology – providing insights on the technologies’ early beginnings that have rapidly evolved as part of mainstream interfaces. McSherry will also detail why voice and Swype technologies are game-changers for consumers – and inherently OEMs and carriers – and how we’ll see a compelling combination voice and touch expand beyond the mobile device into our cars and our digital living rooms.

Company summary: Nuance Communications is a leading provider of voice and language solutions for businesses and consumers around the world. Its technologies, applications and services make the user experience more compelling by transforming the way people interact with devices and systems. Every day, millions of users and thousands of businesses experience Nuance’s proven applications.

Describe the most important things that Nuance is working on related to the future of touch, gesture, and motion: Nuance offers the industry’s only comprehensive device- and cloud-based offerings for intuitive voice, touch and gesture technologies, including the renowned Dragon, XT9 and Swype portfolios. Nuance is setting a global standard for how people interact with their mobile world, be it on phones, tablets, consumer electronics, cars and the digital living room. In fact, hundreds of millions of people use and trust Nuance Mobile technology every day. Every major mobile company – Amazon, Apple, AT&T, Audi, BMW, Ford, GM, HTC, Lenovo, Mercedes-Benz, Motorola, Nokia, OnStar, T-Mobile, Verizon Wireless, ZTE – to name a few – all depend on Nuance Mobile.
Michael Woolstrum, Co-founder and CEO, Touch International

Michael Woolstrum, Chief Executive Officer, founded Touch International in 2002. With more than 20 years of touch screen industry experience, Woolstrum has held several top management positions, including President and CEO of touch systems manufacturer TouchSystems, director of worldwide Resistive sales for MicroTouch Systems (now 3M Touch Systems), and founder of the MicroTouch Systems Specialty Products Division.

Abstract: “Got a New Product? Put a Touch Screen on It!” A review of touch applications in the vertical market – While there is no shortage of products and companies delivering interactivity through mainstream mobile devices like tablets, smartphones and e-readers, the concept of creating intuitive GUI systems for the vertical markets is sometimes overlooked, but still very important. The “touch experience” that was first popularized by the Apple iPhone is now expected by users in a host of diverse, non-consumer applications ranging from marine navigation systems and agricultural machinery to surgical imaging and military communication tools. The potential for touch within these segments are endless.

While touch technology was invented long before the iPhone, there are several reasons vertical markets have taken longer than consumer products to adopt touch, including extended lifecycle and design times, high development costs, and the need for proven, reliable touch technology.

In this session, we will examine how touch is being used in specialty and vertical markets, explore the development of touch within these business segments, and answer the question, “what’s next?” We will also review why touch in these markets deserves a second look and why product developers, equipment manufacturers, and even software designers should care about touch in these applications. Join Touch International at Touch Gesture Motion 2011 for what promises to be a motivating session that just may inspire you to put a touch screen on it!

Company summary: Shaping the way interactivity is used in non-consumer applications, Touch International helps device manufacturers bring engaging user interface systems to the vertical markets. With years of experience, continuous research and development, and sheer ingenuity, Touch International leads the industry in specialty touch screen and display enhancement solutions for OEMs and VARS in military, aerospace, medical and industrial applications. Providing unparalleled accuracy and durability, its collection of standard and custom projected capacitive and resistive touch screens are designed to meet the exacting requirements and highest expectations of its users. Headquartered in Austin, Texas, Touch International is a privately held company and was founded in 2002 by industry veterans Michael Woolstrum and Gary L. Barrett.

Describe the most important things that Touch International is working on related to the future of touch, gesture and motion: Interactive communication has quickly evolved from single-touch input, to multi-finger gesturing, and now into full motion interactivity. What was once thought of as crazy and futuristic display technology only reserved for movies like the Minority Report, 3D is now becoming a reality. Known for taking innovative technologies into specialty markets, we are taking the “bull by the horns” and developing 3D touch by expanding the Z range of projected capacitive sensors. These new capabilities will allow for incorporating gross arm and hand gestures in future touch applications like medical devices and in-flight instruments, creating the full motion interactivity of the future.
David Nolte, SVP Engineering, Ocular

David Nolte joined the Ocular team as Senior Vice President of Engineering in 2010. David has over 30 years of experience that includes multiple leadership and executive management roles at Motorola and Emerson Network Power. Leadership positions in engineering, business strategy and advance manufacturing engineering have provided David the knowledge and experience to lead the Ocular engineering team. David also has experience managing multi-million dollar delivery programs and is well versed in finding, training and managing top-quality technical teams. David holds a Bachelor of Science degree in Electronic Engineering from DeVry Institute of Technology and has completed several courses at Motorola University.

Abstract: “Overcoming Design Challenges with Projected Capacitive Touch Panels” – Due to their robust nature, projected capacitive (PCAP) touch panels add strength and durability to devices. Additional benefits provided by the glass construction of PCAP touch panels are increased optical clarity, resistance to scratching and the ability to withstand dirt, debris and harsh cleaners. Many applications and industries will benefit from the robust design of a projected capacitive touch panel, including medical devices and automotive applications. As with all newer technologies, design challenges must be overcome to fill the requirements presented by a wide variety of applications.

Company summary: Ocular is a leading supplier of industrial touch panels and display products to the embedded technology industry. Crystal Touch, Ocular's line of projected capacitive touch panels, is made of capacitive glass, resulting in a very durable touch panel that is less susceptible to scratching, resistant to chemicals, harsh cleaning agents and other contaminants. The glass construction of Crystal Touch ensures a crystal clear image and allows for products to utilize touch panels in a wide range of temperatures, extreme environments and in a variety of applications. Along with its durability, performance and clarity, Crystal Touch provides significant design flexibility and has been used in many faceplate configurations, including zero-bezel designs. Crystal Touch is available in Single Touch and TRUE Multi-Touch in a variety of sizes. Utilizing Atmel maXTouch solutions, Crystal Touch: TRUE Multi-Touch allows for up to 16 simultaneous touch points. The sophistication of maXTouch technology creates a high performance, smart interface that can ignore unintended touches.

Describe the most important things Ocular is working on related to the future of touch, gesture and motion: Ocular is currently working on large-size projected capacitive touch panels, improvements to ITO use, ITO alternatives, and rapid prototyping for customized designs.
Ola Wassvik, Co-founder and CTO, FlatFrog

Ola Wassvik co-founded FlatFrog in 2007 together with serial entrepreneur Christer Fåhraeus. Ola has specialized for a decade in developing optics-based input systems for volume applications. Ola is responsible for the overall development of FlatFrog's proprietary technologies, and is one of the principal figures behind the company's key patents. Prior to co-founding FlatFrog, Ola served as Senior Optical Engineer in positions in Denmark and Sweden. While he served at publicly listed Anoto AB, Ola developed the company's proprietary optical solutions from inception, and was responsible for setting up volume production lines that to date have produced millions of units. He holds a Master of Science degree in Physics from Lund University, Sweden.

Abstract: Planar Scatter Detection (PSD) is a novel method for making optical multi-touch devices. PSD utilizes the physical principle of FTIR (Frustrated Total Internal Reflection) in combination with proprietary optical detection and advanced decoding algorithms. The technology relies on the fact that as computational power continues to decline in cost, it will always be beneficial to implement a touch system where the detection is simple and the processing of data is complex. PSD enables the creation of multi-touch systems with certain key advantages: they can be manufactured in slim, flush form factors at low cost, they can provide unlimited simultaneous touches, and they can scale to cover any size ranging from mobile handsets to interactive whiteboards – without suffering from the drawbacks normally associated with traditional projected capacitive systems or other optical touch systems.

Company summary:
- Founded by serial entrepreneur Christer Fåhraeus and Ola Wassvik in the heart of European consumer electronics hub
- Disruptive in-glass, optics-based multi-touch subsystems for the rapidly growing touch market
- Developed by a world-leading engineering team with expertise in optics, opto-mechanics, signal processing and high-volume manufacturing
- Strong focus on fully blocking the technology IP space with its distinct advantages in cost, optical clarity and input means
- Taking orders for pre-volume prototypes, with volume roll-out in early 2012
- Backed by Sunstone Capital, Invus and Promethean

Describe the most important things that FlatFrog is working on related to the future of touch, gesture and motion: FlatFrog’s mission is to deliver the highest quality touch systems with regards to user experience. We will accomplish this by delivering low latency, optically clear, unlimited multi-touch with any input method be it finger, stylus or other object. And this will be done at all sizes ranging from the small to the very large at price points significantly lower than the current de facto standard solutions. Furthermore we want to expand the current options that developers of touch applications have by including pressure detection, tag recognition and shape detection.
John Doherty, Co-founder and Motion Fellow, Motion Computing
Mike Stinson, VP Marketing, Motion Computing

As a co-founder and Motion Fellow, John Doherty brings over 30 years of consumer and commercial product development and managerial experience to Motion Computing. John currently leads new technology investigations and ran Motion’s product development organization during the company’s early years. Prior to joining Motion, John spent eight years at Dell Computer Corporation and 15 years at Apple Corporation managing the development of computer and peripheral products.

As Vice President of Marketing, Mike Stinson brings over 15 years of portable computer marketing experience to Motion Computing. Prior to joining Motion, Stinson was the founder of Sabio Digital, a company focused on sourcing notebooks from Asian manufacturers into the white-box channel in the U.S. Prior to founding Sabio Digital, Stinson served as the VP/GM of Mobile Products for Gateway.

Abstract: “Optimizing Finger Touch and Pen Input for the Enterprise Tablet Market” – Over the past two years, the consumer tablet market has exploded, due in large part to the popularity of the iPad. With the iPad came a widespread assumption that finger touch was the prime input method for the tablet form factor. While touch input may suffice for consumer use or media tablets, for the enterprise market, a high-resolution stylus or pen input is essential as well. In enterprise environments, tablets are productivity tools used to gather information at the point of service. For example, a nurse documenting a patient’s vitals at the bedside, a construction worker comparing shots of existing conditions to a building information model (BIM) or a sales associate checking inventory and completing transactions. While touch input is applicable, mobile professionals also require a more precise input method for small button applications as well as the ability to handwriting notes or capture signatures. This presentation will focus on the importance of optimizing both finger touch and pen input for the enterprise tablet market and the benefits it provides across vertical markets.

Company summary: Motion Computing is a leading global provider of enterprise tablet PCs and supporting mobility solutions for target vertical markets, including construction, field service, healthcare and retail. The company’s enhanced line of rugged tablet PCs are designed with advanced finger touch and high-resolution pen input options for quick, accurate and enhanced data collection at the point of service, creating an unparalleled offering. Motion® Tablet PCs ensure a successful mobile deployment for increased productivity and efficiency, reducing project risk while delivering a more rapid return on investment.

Describe the most important things that Motion Computing is working on related to the future of touch, gesture and motion: Motion understands the specific needs of mobile professionals, and we strive to provide our customers with the best mobile computing solutions possible. As such, we continually evaluate and reevaluate new input and display technologies and features in order to increase speed, accuracy and viewability so users can seamlessly gather the data they need to get the job done. From the beginning, all Motion products have included a high-resolution pen to facilitate not just the consumption of data, but intensive data entry and handwriting recognition as well. While pen input comes standard on our complete line of tablet PCs, we are exploring enhancing and expanding finger touch input. Motion also includes cameras and motion sensors in all of our products, opening up the possibility of incorporating the latest developments in gesture and motion-related software controls.
Gerald Morrison, External Research Manager, SMART Technologies

Dr. Gerald Morrison is an Electrical Engineer who has worked at SMART Technologies for nearly 16 years. During that time he has held many roles in development, research and management – all related to touch and interactivity. He is currently working in SMART Labs where he contributes to the research and development of future innovative technologies and products. As an External Research Manager he is actively working with individuals, universities and other external organizations in developing interactive and collaborative technologies. Dr. Morrison has over 25 publications and is a named inventor on 20 U.S. patents and 19 international patents, with others pending.

Abstract: “Technology in Education: A SMART Perspective” – Technology is pervasive in education and SMART has been an important leader in this area for over two decades. Interactive touch technologies have a positive effect on student engagement and motivation. Different types of interactive technologies accommodate a variety of learning styles and enhance the capacity for learning. This presentation will review some of the interactive technologies seen in today’s classrooms and discuss the benefits they bring to a modern learning environment.

Company summary: SMART Technologies is a leading provider of collaboration solutions that transform the way the world works and learns. We believe that collaboration and interaction should be easy. As the global leader in interactive whiteboards, we bring more than two decades of collaboration research and development to a broad range of easy-to-use, integrated solutions that free people from their desks and computer screens, so collaborating and learning with digital resources are more natural.

Describe the most important things that SMART is working on related to the future of touch, gesture, and motion: SMART Technologies has a deep understanding about how to make successful products in the interactive display industry, the kind that people both like and want to use. We use our experience in designing and enhancing technology solutions to increase global awareness of the many benefits of interactive touch displays and to increase their adoption. We will continue to provide thought leadership and innovative products in both enterprise collaboration and next generation learning environments.

David Potter, Commercial Director, Interactive Product Solutions

David Potter has an Honors degree in Metallurgy and Materials Technology and a wide business background ranging across senior management positions in industries including Electronics, Engineering, Education and Finance. Latterly he has focused on ‘disruptive technologies’ and developed wide experience & practical knowledge of intelligent packaging, printable electronics, RFID, & anti-counterfeiting technologies. He has created numerous innovative concepts that enhance the brand experience for clients based on a variety of emerging printable electronic technologies. This background has led him to form Interactive Product Solutions Ltd, a system integrator that offers practical solutions for Global Brand owners seeking to engage their customers with innovative, interactive products & packs.

Abstract: “Interactivity for Packaging, Promotional and Point Of Sale items using Printable Electronics” – A new breed of processes, materials and inks are becoming available enabling low cost, disposable, and environmentally friendly, electronic components and devices to be printed onto flexible substrates such as paper, polymer films and board. The implications of these innovations have profound consequences for Packaging, Promotional and Point of Sale items of all types. Many companies throughout the world are now engaged in a race to develop commercial products and stimulate end user demand. This talk will review the status of the technology developments taking place and the new market opportunities being created.
Dan Doyle, Principal, Toca Technology

Dan Doyle has been instrumental in the development of advanced technology for 25+ years for Intel, Electronic Designs, WEDC, Toca Technologies, and Wacom. Dan holds patents and inventions in advanced semiconductor IC packaging, LCD displays and technologies for the purpose of improving optical transmission, lower surface reflections, higher contrast and better outdoor performance. Many of Dan’s technology advancements are utilized today in mainstream applications for world-class PC’s, Mobile devices, and industrial applications. During the past three years, Mr. Doyle has focused on improving the user experience through the integration of multi-touch, optics and pen technologies. His technology insertion and innovations can be found in numerous mainstream applications including PC and mobile communications. As a co-founder of four successful business enterprises, Mr. Doyle blends his entrepreneurial skills and technical expertise with a visionary outlook to transform technology into mainstream products. His most recent endeavor, Toca Technology was successful in penetrating Apple, HP, Dell, Garmin, Lenovo, Toshiba, Fujitsu, Wacom, and Motion Computing with Multi-Touch Technology. Toca Technology was founded in 2008 and has over $250 million in sales.

Hyatt Regency Austin

The Touch·Gesture·Motion Conference will be held at the Hyatt Regency Hotel in Austin, Texas. Discover the perfect balance between the city beat and resort calm at Hyatt Regency Austin. Set on the shore of Lady Bird Lake, the ideal location of our AAA Four Diamond downtown Austin hotel lets you experience the best of our eclectic city. Catch the display at the famous "Bat Bridge,” right across from the hotel. Wander across Congress to find yourself immersed in the entertainment districts – including SoCo, Warehouse District, 2nd Street and Sixth Street.

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Late Afternoon Session: December 7, 2011 – TGM Technologies

Dan Van Ostrand, Founder and SVP Engineering, Research & Development, UniPixel

Mr. Van Ostrand founded UniPixel and has served in a Senior Executive position since the inception in February of 1998. In his role as head of Engineering and R&D, Mr. Van Ostrand has lead UniPixel in breakthroughs on technologies such as TMOS MEMS display development, roll-to-roll printing of conductive electronic circuits for various applications (including touch sensors), optical films technology, hard coated film, and he is registered on over 50 issued and filed patents. Prior to his current role, Dan was co-owner of a closely-held company that designed ruggedized VME-based tactical computer systems for the United States Army, where he was exposed to and became interested in the design, development and engineering principles of flat panel display technology. Mr. Van Ostrand was a Systems Engineer from 1980 until 1992 for Informatics General, Magnavox, Teledyne and the Jet Propulsion Laboratory. He has a BA with a double major in Math and Computer Science from Mid-America Nazarene University.

Abstract: Mr. Van Ostrand will discuss UniPixel’s UniBoss process for printing ultra-fine line electronic conductor patterns. UniPixel’s thin film based touch sensor process utilizes roll-to-roll printing to produce the fine lines an invisible touch sensor requires. Mr. Van Ostrand will discuss how this new printed conductor film can be used to replace expensive ITO Touch sensors. The UniBoss printed touch sensor is lower cost, consumes less power, weighs less, is more durable and in many cases utilizes existing controllers and system architectures.

Company summary: UniPixel’s UniBoss takes touch display technology into the next generation. The UniBoss printed touch sensor is lower cost, consume less power, weighs less, thinner, and more flexible than existing solutions. Our micro-contact printing technology is much more environmentally friendly than the photolithographic etching process currently used for patterning ITO.

Describe the most important things that UniPixel is working on related to the future of touch, gesture, and motion: UniPixel opens the potential for a significant expansion of the usage of touch interfaces. UniPixel enable multi-touch sensors to be used in a broader range of devices, because UniPixel can make touch sensors in a wider range of sizes, less expensive, and more durable than ITO based sensors. When you combine our UniBoss touch sensors with our Diamond Guard hard coat you can now unshackles touch sensors from the requirements of expensive and breakable cover glass.

Francois Jeanneau, Director of Sales & Business Development, Stantum

With more than 15 years of technology and international expertise, Francois Jeanneau brings a variety of sales, marketing and business development skills to Stantum. Prior to joining Stantum, he was the director of sales for the Americas at UPEK, Inc., where he helped establish the company’s leadership position in the PC market for trusted fingerprint biometric solutions. Jeanneau has also held global marketing and business development management positions at several leading companies, including STMicroelectronics and PeopleSoft. Jeanneau has an engineering degree from ICAM France and a master’s in business administration from the University of California, Berkeley.

Abstract: Unlocking the creative potential of tablets with multi-modal interfaces combining touch and stylus user interfaces.

Company summary: Stantum has been a pioneering company in multi-touch technology since 2002, and in 2005 was the first company to market commercial products using a truly reliable multi-touch user interface. Since then Stantum has improved its technology - a multi-
modal solution that combines multi-touch and high resolution stylus user interfaces. Stantum’s patented and breakthrough technology portfolio is available via its network of licensees. Stantum is headquartered in Bordeaux, France.

Describe the most important things that Stantum is working on related to the future of touch, gesture, and motion: Stantum’s goal is to unlock the creative potential of tablets by offering a new natural user interface paradigm that is both bi-manual and multi-modal. Bi-manual connotes that the interface leverages our natural ability to use our two hands to execute complex tasks. Multi-modal interfaces allow us to choose the input technique that looks the most appropriate for a given task or context: the tip of our finger to flip the pages of a book, a stylus for drawing or annotating it.

Rusty Stapp, Director of Major Accounts, NextWindow

Rusty Stapp is the Director of Major Accounts for NextWindow. He received his B.S. in Electrical Engineering Technology from Texas A&M and his MBA from the University of Texas at Dallas. Mr. Stapp has been in the flat panel/touch industry for over 17 years including time with Planar, Eastman Kodak, Clairvoyante and NextWindow. He has been involved in a wide range of technologies from EL displays, OLED materials & displays, TAC & backlight films, subpixel rendering for OLED’s & LCD and optical touch technology.

Abstract: Optical touch technology provides a cost effective multi-touch solution for devices >20” in the majority of applications today. While optical touch is not the appropriate solution for all devices or applications, it does present an excellent technology choice for consumption oriented devices.

Company summary: NextWindow, a wholly-owned subsidiary of SMART Technologies Inc., is a supplier of optical touch panels and touch-screen components to many of the largest OEM and ODM electronics manufacturers in the world. With accurate, cost-effective solutions designed for easy integration into all-in-one computers, computer displays and large-format screens, NextWindow develops the hardware necessary to bring touch-screen applications to life. NextWindow has offices in New Zealand, Taiwan, the United States, Singapore, Korea and Japan, with manufacturing facilities throughout Asia.

Describe the most important things that NextWindow is working on related to the future of touch, gesture, and motion: NextWindow continues to develop optical touch technology to meet the growing demand for mainstream touch applications. With increased demand for multiple touch points and multiple users on a single screen, NextWindow continues to innovate and build touch solutions for applications not yet in existence. In addition to anticipating future trends in touch, NextWindow remains committed to the development of solutions for the OEM/ODM community and their customers through lowering costs, increasing touch points, reducing hardware sizes, simplifying the technology and increasing performance.
Jay Esfandyari, MEMS Product Marketing Manager, STMicroelectronics

Jalinous Esfandyari has more than 20 years of industry experience in Semiconductor Technology, Integrated Circuits Fabrication Processes, MEMS development and fabrication, and strategic MEMS market and business development. In the capacity of MEMS Product Marketing Manager at STMicroelectronics, Jay Esfandyari has developed new markets for MEMS products and achieved multi-million dollar business opportunities. In his previous roles, Jay worked closely with customers to develop custom MEMS products, developed models to describe the physics of defect generation in silicon wafer during device fabrication processes, created solutions to perform analysis and computer simulation to improve the quality of silicon wafers. Jay Esfandyari holds a master's degree and a Ph.D. in Electrical Engineering from the University of Technology of Vienna, Austria.

Abstract: “MEMS sensor fusion for gesture recognition and motion tracking” – A few years ago, gesture recognition was based on an accelerometer only. If the pattern from the accelerometer data matched the pre-registered pattern in a database, functions such as unlocking the phone were triggered. Currently, complex gesture recognition can be achieved with the help of an accelerometer, a gyroscope and a magnetometer. The 9-axis sensor fusion algorithm is required to use sensor data from the three above-mentioned sensors to compensate both the magnetometer distortion caused by the interference of an external magnetic field and the drift of gyroscope bias. The sensor fusion algorithm can output pitch/roll/heading angles, quaternions, linear acceleration and gravity, which can be used to control the moving object or capture the motion of the object. In 2D plane, the sensor fusion algorithm can output the distance change with respect to horizontal and vertical axes like an air mouse or pointer. This output can then be used for complex gesture recognition the same way as the audio pattern recognition. This presentation will give an overview on a complete sensor fusion solution for motion tracking and gesture recognition.

Company summary: STMicroelectronics is a global semiconductor leader serving customers across the spectrum of electronics applications and the leading supplier of MEMS (Micro-Electro-Mechanical Systems) sensors for consumer and portable applications. In addition to MEMS accelerometers, gyroscopes, magnetometers, pressure sensors and microphones, STMicroelectronics provides a new family of advanced filtering and predictive software that uses sophisticated algorithms to integrate outputs from multiple MEMS sensors. Real-time on-board motion-sensor data fusion is set to dramatically improve the user experience, increasing accuracy, resolution, stability and response time in advanced motion-based applications in consumer, computer, industrial and medical fields. The company has delivered more than 1.5B units MEMS accelerometers and gyroscopes to the market.

Describe the most important things that STMicroelectronics is working on related to the future of touch, gesture and motion: STMicroelectronics will continue to bring high performance and low cost MEMS sensors to the market. The sensor fusion algorithm library from STMicroelectronics is being widely integrated in smart phones and tablet PCs for motion gaming, augmented reality, and indoor navigation, among other applications. It will also benefit the development of many other applications such as gesture recognition, air mouse and body motion tracking in the future.
Afternoon Session: December 8, 2011 – Gesture/Motion Technologies

Keynote Speaker #3: “The Future Beckons”

Jonathan Epstein, President, Omek Interactive

Jonathan Epstein is president of Omek Interactive, the leading provider of tools and technology for incorporating gesture recognition and body tracking capabilities into devices and applications. Epstein has helped drive the growth of Omek for more than 4 years, first as an advisor, then as a board director prior to becoming president. Epstein has more than 25 years of high-technology media and marketing experience, and a track record that includes the successful launch and sale of several companies in the fields of media, gaming, and technology. Prior to joining Omek, Epstein served as CEO of Double Fusion, the leading independent in-game advertising firm. Before Double Fusion, Epstein helped establish the digital media and gaming practice at United Talent Agency. Epstein was a co-founder of GameSpot, which was sold to ZDNet, and was subsequently president of GameSpy, which was sold to IGN Entertainment, where he ran the company's media division before its sale to Fox Interactive Media. Epstein sits on a number of boards of games, media, and technology companies.

Abstract: “The Future Beckons” – For several decades now, technologists and researchers have sought to change the way man interacts with machine, to remove the barriers that distance us from effective and efficient interaction and control of our devices and software. Of all of the natural user interface technologies, gesture recognition – which can connote both meaning and position, from a distance – has the greatest potential to become ubiquitous. Like many new technologies, gesture recognition has entered the mainstream through gaming, and is now poised to change how we experience our televisions, our mobile devices, our outdoor advertising, our computers, and a huge range of other devices. Will we eventually gesture everything? In this presentation, Omek Interactive president Jonathan Epstein looks at some of the innovative applications driving the future of gesture recognition hardware and software, and exposes the hurdles the industry will need to clear to drive towards ubiquity.

Company summary: Omek is transforming the way people interact with their devices and applications, by providing tools and technology that enable manufacturers and software developers to add gesture-based interfaces to their products. Omek's Beckon(tm) technology is being incorporated across a broad range of devices - from TVs, set-top boxes and game consoles, to tablets, notebooks and PCs, smartphones, interactive signs, medical and fitness devices, and more - to drive next generation UI and application experiences. The Beckon Development Suite is a full-featured set of gesture recognition middleware and tools, and is the only such software that supports all the major 3D cameras, including cameras from Microsoft, Panasonic, PrimeSense, PMD, ASUS and others. Beckon allows developers to work in their favorite development environments and frameworks, and supports a broad range of processors and operating systems.

Describe the most important things that Omek is working on related to the future of touch, gesture and motion: Omek is on the vanguard in the development of technology that enables people to control everything - without touching anything. We're focusing on expanding the precision and capabilities of our gesture recognition software, increasing its usability, and broadening the range of supported operating environments. Omek Beckon (tm) is being released on the Texas Instruments DM3730 SoC (the processor on the popular BeagleBoard development system) and we'll continue to add support for other processors while further optimizing performance on Intel-based architectures. We're continuing to expand the function of Omek's Gesture Authoring Toolkit, which provides a simple machine-learning interface to create command and control gestures. Omek is also working on a new close-range gesture recognition product for computers and mobile devices - Omek Grasp(tm) - which will allow people to use their hands and fingers for high precision control at distances between 5 and 150 cm.
Jeff Bier, Co-founder and President, BDTI
Founder, Embedded Vision Alliance

Jeff Bier is co-founder and president of Berkeley Design Technology, Inc. (BDTI), the industry’s most trusted source of analysis, advice, and engineering for embedded processing technology and applications. Jeff oversees BDTI’s benchmarking and analysis of chips, tools, and other technology. Jeff is also a key contributor to BDTI’s consulting services, which focus on product-development, marketing, and strategic advice for companies using and developing signal processing technologies.

Jeff is a recognized industry expert and sought-after speaker, frequently presenting talks on signal processing applications and technologies. Jeff is also a frequent contributor to InsideDSP, an online newsletter dedicated to digital signal processing technology. Jeff earned B.S. and M.S. degrees from Princeton University and U.C. Berkeley

Bill Curtis, Senior Fellow, AMD

Bill Curtis is lead architect for the human-computer interface program and a key contributor to several other platform design initiatives. Mr. Curtis has developed many profitable and long-lived products and is a named inventor on many patents covering a broad range of technologies.

Abstract: Natural User Interface - The Second Revolution in Human-Computer Interaction – Beginning about twenty years ago, a confluence of technical advancements enabled a revolutionary change in computing: interactive graphical user interfaces. Previously possible only on expensive UNIX workstations, GUIs on consumer PCs made computing accessible to everyone. Since then, interactive computers have steadily become much more powerful, smaller, lighter, and cheaper. Today, your smart phone has more raw computational power than a typical desktop ten years ago. Although we now use touch as well as mice and keyboards, we still interact with computers like we did twenty years ago, pointing at graphical objects and filling in forms. We now stand at the threshold of the second revolution in human-computer interaction – Natural User Interfaces. “Natural” UIs will sense the world like people do, directly interpreting human characteristics and behavior including speech, facial expressions, gestures, physical actions, and biological traits. In this talk, we will introduce a simple model for NUI computing and show what’s necessary for sensors, I/O techniques, computing platforms, and software to combine into ambient services that disappear into your environment and become part of everyday life. This revolutionary transition will be fueled by advancements in silicon, operating systems, and computer architectures that will enable NUI-optimized computer platform designs. The interactive computing revolution took over twenty years to play out. We’re just now getting started on NUI and this time the challenges and opportunities are much greater.

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Dave Rothenberg, Worldwide Marketing and Communications Manager, Movea

Dave Rothenberg heads WW Marketing and Communications for Movea and has over 14 years of Go-To-Market experience productizing and commercializing new technologies for companies in Silicon Valley and Europe. Mr. Rothenberg has held senior management roles in Marketing, Business Development, and Engineering, across a range of markets including: Enterprise Software, Wireless and Mobile, Consumer Electronics, Health and Fitness, and Web Services. He holds dual degrees in Aerospace Engineering and Physics from the University of Colorado, Boulder.

Abstract: “Technologies, Products, & Human Behavior” -- The Wii started a revolution in home entertainment. Suddenly gaming was no longer simply pushing buttons or a joystick but rather your body became the game controller. That was a profound change for an industry and for consumers. In a similar way, the first iPhone changed our perception of the mobile phone, making our relationship with that most personal of devices even more intimate. Product designers know that one key to maximizing the potential success of new product introductions lies in not forcing people to change their behaviors. Behavioral change is hard, when it’s forced. Consumers more readily adopt products which help them do the things they already like to do, but in ways which are easier, faster, more fun, or which amplify their ability to do the things they like to do by extending or projecting their reach in ways both real and virtual.

There are many different ways in which touch, gesture and motion can enhance the home entertainment experience. Movea has created MoveTV, a new SmartMotion solution for the Pay TV market. MoveTV provides Pay TV ecosystem partners with a single platform on which to create a complete motion-enabled entertainment experience for consumers. MoveTV is a unique platform that advances and simplifies the integration of motion powered entertainment for Pay TV subscribers. For the first time, service providers, game and application developers, remote control and STB manufacturers, DTV OEMs and system integrators, can all leverage a unifying platform and easily incorporate motion control into their products using Movea’s patented SmartMotion technologies.

Company summary: Movea's unique motion-processing capabilities enable our customers to quickly add motion intelligence to their products. Through our easy-to-integrate technologies, Movea clients reduce their risk, cost, and time-to-market to deliver compelling motion-based features that set their products apart from the competition and create more end-user value. Movea is the bridge between raw sensor data and compelling motion-enabled applications. We apply innovative data-fusion techniques to acquire a deep understanding of human motion derived from gyroscope, accelerometer, and magnetometer and other sensor data. By making motion intelligence easy, we close the gap between market need and product reality. Movea has a global reach with headquarters in Grenoble, France, a US subsidiary in Silicon Valley, California, as well as technology partners, manufacturing partners and distributors around the world. Our technology, patents, and products drive motion enabled applications for set-top boxes and remote controls, IPTV, media-center and computer peripherals, sports, mobile, and health and wellness.

Describe the most important things that Movea is working on related to the field of touch gesture and motion: Movea is the pioneer and global leader in providing motion processing technologies for software, embeddable solutions and semiconductor IP to create more interactive, motion-based applications. Whether that is through pedestrian navigation, computer peripherals, e-health and wellness, mobile phones, tablets, or remote controls, Movea is creating technology for consumer products that are fully motion based. MoveTV is Movea’s most recent endeavor in the Interactive TV; creating a fully interactive home entertainment experience, controlled with motion. You can now scroll through movies, music, games, and TV programming with the flick of the wrist. Instead of pushing individual buttons on an already crowded remote, the tedious search tasks can now be completed with simple gesture commands. Movea is transforming the way we interact with our home entertainment system by adding the element of motion.
Navin Natoewal, General Manager, Media Interactions Group, Philips

Navin Natoewal is General Manager of the Philips Media Interaction team of which uWand is the first commercially available technology. uWand is a direct pointing and gesture control technology for remote controls. uWand offers fluent 3D gesture control and direct pointing capabilities with the same intuitiveness as a multi-touch screen. uWand can be implemented in remote controls and interact with multiple electronic devices such as PCs, TVs, set-top boxes, DVD players and game consoles. Users control the devices simply by pointing in the appropriate direction or making specific movements in all three dimensions.

Abstract: For everyone engaged in the creation of user-configurable electronic devices the ideal is to provide a cost effective device interface that is highly effective, intuitive, convenient, flexible, and both immediately and universally understood by the target market. But it’s a very big ask – human interaction is a fiercely complex environment, defined as much by difference as it is by commonality. Human to human interaction uses a combination of speech, eye contact, gestures, touch, facial expression and subtle body language to convey meaning. The combination of those elements is complex enough but it is further complicated by the fact that the individual elements of human interaction are not necessarily shared across races, nationalities or even demographic sectors. In Western cultures for instance, the thumbs up gesture is generally recognized as a positive signal however, if used in Japan, you may find yourself in a bunch of trouble for insulting the recipient. In this presentation Natoewal will discuss the level of sophistication required for human to machine interaction versus what we see in human communication, and pose several questions to those designing the interfaces including:

- When designing interface devices, particularly those for worldwide consumer adoption, what are the basic communication protocols that need to be adopted to ensure they are universally understood?
- Human to human interaction is significantly enhanced by using a combination of elements, speech and body language for instance. Should the same approach be applied to device interaction?
- People use the same basic tools chatting to a parent as they do talking to their boss. Could that be applied to device interaction? Could, or should, a universal language for multi-device interaction, meaning the same gestures can be applied to all devices in the living room (also those beyond the TV) be developed?

Natoewal will then discuss how Philips is currently addressing this. As a company they are turning as much to anthropology and sociology as they are to pure technology research to answer these questions. Natoewal’s presentation will focus on the application of that research to address the immediate need for much more sophisticated control of next generation TVs, before looking at how the same approach might be applied in other sectors of the market. He will cover how Philips is able to maintain the core, recreational, ‘lean back’ experience of traditional broadcast television, and open the door to significant revenue generating opportunities for device manufacturers, service providers, application developers and content owners. Finally Natoewal will conclude Philips’ ‘remote touch’ technology which is embodied in a device known as the uWand. He will talk about the technology itself and the wider applications a single remote touch device could potentially be used for including controlling every electronic device in the home, from lighting and heating to music and home security.

Company summary: uWand is a new class of ‘remote touch’ technology from Philips. When embedded in remote controls it gives users fluid and accurate direct pointing and 3D gesture control on TVs and set-top boxes. Unlike controls based on touch pads and gyroscopes, it is an inherently intuitive experience for point-and-click control. uWand opens the door to significant revenue generating opportunities. The technology delivers PC-like interactive services for gaming and VoD, as well as maintaining the core, recreational, passive TV experience meaning device manufacturers, service providers, application developers and content owners can design for all Smart TV use cases.
Describe the most important things that Philips is working on related to the future of touch, gesture and motion: At Philips, we believe the next battle-ground for service and platform differentiation will be enhancing the user experience. A good user interface is the most important element of this so as a company, we are looking as much to anthropology and sociology as we are to pure technology research to understand the nuances between human-to-human and human-to-device interaction. We are exploring the ways in which communication protocols required for designing universal device interfaces may differ from human-to-human interactions. As such, we’re working on enhancing device interaction whether it’s by following the same protocols as human-to-human interaction which combines elements of speech as well as body language to convey meaning, or something else. We are also investigating whether it’s possible (or even appropriate) to design a universal language for multi-device interaction bearing in mind the meaning of individual gestures are not necessarily shared among cultures or geographies. Although our ‘remote touch’ uWand technology means we are able to address the immediate need for much more sophisticated control of next generation TVs, we are also looking at how the same approach might be applied in other sectors of the market.

Dan Simpkins, CEO and President, Hillcrest Labs

Dan Simpkins is CEO of Hillcrest Labs, which he founded in 2001. Under its Freespace brand, Hillcrest is the leading provider of inertial motion sensing solutions. Hillcrest's award-winning products include the Loop pointer and the Kylo browser for TV. Prior to founding Hillcrest, Dan was vice president and general manager of the SALIX Switching Division of Tellabs, Inc. The division was established in 2000 when Dan sold VoIP leader SALIX Technologies, the company he founded in 1990, to Tellabs for $300 million. In 2010, Dan was recognized by The Gazette of Politics and Business as one of the top 25 CEOs in the Washington, D.C. area. Hillcrest was recognized in 2010 and 2011 as one of the “Exceptional 53” companies in the state of Maryland. Dan is a former executive in residence for New Enterprise Associates (NEA), one of the country's premiere venture capital firms, and is an advisor to LaunchBox Digital, an early stage investment firm. He is a frequent speaker at industry events, has authored papers on both technical and business subjects, and is a member of the Consumer Electronics Association (CEA) and the Institute of Electrical and Electronics Engineers (IEEE). Dan has ten issued U.S. patents in the fields of interactive television and telecommunications. Dan earned a bachelor's of science degree in electrical engineering with distinction, and a master's of engineering degree in electrical engineering, both from Cornell University. He currently serves on the Cornell Engineering College Council, an advisory group to Dean Lance Collins.

Abstract: “How Gesture & Motion Technologies will Shape the Future” – Ensuring a successful future for any technology is largely dependent upon end-user satisfaction with products that incorporate or utilize the technology. The future of gesture and motion control technologies, such as MEMS Inertial and Magnetic sensors, is no different. Whether used in medical devices, robotics, or CE devices such as smartphones, game controllers, or Smart TV remotes, the future success of motion sensing devices relies on the quality of the entire system. This includes the sensor devices and software stack that integrate the sensors into a product to deliver a holistic and engaging end-user experience. This presentation focuses on the key software elements that provide the linkage from the raw sensor output to the end-user product and how these elements fit together to create the optimum result by addressing specific aspects of system functionality. Session attendees will learn about:

- Steps for integrating motion sensing to design and build immersive applications, and to reap the associated rewards
- The value of matching quality motion sensors with high performance software to ensure OEM success in using motion sensors
- Sensor fusion, calibration and motion processing necessary to ensure the greatest end-user benefit
Company summary: Hillcrest Labs pioneered the use of MEMS inertial sensors for use in remote controls with its Freespace motion control technology and today is a leading provider of natural motion control solutions for the consumer electronics industry. Hillcrest Labs’ Freespace motion solutions deliver exceptional end-user performance by combining the company’s proprietary algorithms, software and IP with MEMS inertial and magnetic sensors from the industry’s leading suppliers. From software to completed hardware designs, Hillcrest’s motion solutions enable companies to quickly and cost-effectively integrate motion sensing into a broad range of products. The company’s product line makes the integration of natural motion control possible in a wide range of markets, including television, mobile, smart boards, virtual reality, and more. During the past decade, Hillcrest Labs has licensed its Freespace technology to many of the consumer electronics industry’s leaders, including: Eastman Kodak, LG Electronics, Logitech, Roku, and Sony Computer Entertainment Inc.

Describe the most important things that Hillcrest Labs is working on related to the future of touch, gesture and motion: As a leading supplier of natural user interface (NUI) technologies and interactive apps for TV, Hillcrest Labs is at the forefront of bringing to market a wider range of pointing and motion control products, beyond just video games. From software to completed designs, Hillcrest offers an unmatched suite of motion solutions, with expertise in software, hardware, MEMS, DSP, industrial design, mechanical design, and manufacturing. Hillcrest’s R&D team has delivered Freespace, a leading natural motion control technology, to a wide range of the CE industry’s leaders, including: Eastman Kodak, LG Electronics, Logitech, Roku, SMK, Sony Computer Entertainment Inc., Universal Electronics (UEI), and others. Hillcrest has more than 60 issued patents, with more than 200 applications pending worldwide, for its ground breaking technology, and has received numerous accolades for its products.

Now in its tenth year of operations, Hillcrest recently unveiled its second-generation family of user interface solutions that make the integration of natural motion possible in a wide range of markets, such as TV and digital media, mobile handsets and tablets, smart boards, virtual reality systems, robotics, and many others. Hillcrest’s new product portfolio gives customers maximum flexibility to incorporate Freespace motion control into their products and accelerate their time to market. For customers who need the most flexibility, the Freespace MotionEngine provides a fully featured motion software stack that simplifies integration of inertial and magnetic sensors by providing sensor fusion, calibration, cursor control, gestures, and a complete motion API. For customers who want to incorporate a completely designed motion sensor solution, Hillcrest offers a family of new sensor modules. These physical devices come in a variety of configurations that include various combinations of MEMS motion sensors, motion processors, and appropriate APIs. Hillcrest also offers fully designed reference remote controls, such as the Scoop pointer, for those companies that have limited in-house design services, leveraging Hillcrest’s expertise in industrial design, MEMS electronics, and mass scale manufacturing.

Hillcrest’s motion solutions, based on Freespace technology, simplify the design of motion enabled products. The company’s new product portfolio gives more companies low cost, high performing, and highly scalable motion solutions for their future product lines – leveraging Hillcrest’s design know-how to effectively use inertial and other sensors in a wide range of applications.
Jerry Koontz, Director of Marketing, Texas Advanced Optical Solutions

Jerry Koontz joined TAOS, Inc. in 2008 and is responsible for strategic and product marketing for its light sensor portfolio including ambient light sensors, proximity detection and color sensors targeting the consumer electronics, computer, industrial, medical, solid state lighting and automotive markets. His broad industry experience includes 18 years at Texas Instruments Semiconductor Group where he held a variety of global marketing management positions and 10 years at Sprint where he led the development of its wireless telecommunications marketing strategy targeting the Financial Services, Insurance and Transportation vertical markets in North America.

Abstract: “Multi-Sensor Fusion for Intelligent User Experience” -- TAOS, the global leader of intelligent light sensors, is enabling the growing need for touch-less gesture driven services for a multitude of next generation CE devices via its proximity sensor solutions portfolio. Today consumers are demanding improved energy conservation and intelligent user experiences when interacting with their multi sensor-based devices via a natural, touch-less human-machine interface (HMI).

Company summary: As an industry pioneer with more than a decade of analog mixed-signal technology innovation and market leadership, TAOS designs and manufactures smart light sensors that provide increased system integration, design flexibility, functionality and performance for a wide range of products in the consumer, computer, industrial, medical and automotive markets. Offering the broadest portfolio of integrated light sensors in the industry, its ambient light sensor, proximity detection and color sensor solutions deliver an improved user experience and increased energy conservation for mobile devices, display management and solid state lighting applications. An expanding analog and digital RGB color sensor offering provides precise color discrimination, determination and measurement for the most demanding color sensing and target recognition systems. It’s expanding proximity sensor portfolio bridge the gap between humans and machines (HMI), enabling multi-sensor systems to detect human gestures and motion for touch-less interactions and an enhanced user experience, enabling untapped possibilities of gesture recognition for an expanding set of applications.

Describe the most important things that TAOS is working on related to the future of touch, gesture and motion: As the industry’s resident expert for optoelectronics, TAOS is leveraging its unparalleled expertise based on deep system knowledge to develop next generation sensor technology that will deliver more highly integrated devices providing increased capabilities, flexibility and performance required for more sophisticated gesture detection systems.

David Barnes, Principal, BizWitz

David Barnes is an expert in decision support and capital investment with experience advising multi-national boards on a variety of questions concerning display and imaging technologies. He has supported joint venture formations, M&A valuations, intellectual property transactions, market assessments and initial public offerings on three stock exchanges. As a Principal at BizWitz LLC, he helps clients select and focus on profitable market opportunities.

Abstract: “Motion and Imagination” – Speakers on this panel describe a variety of methods for making human-device interaction more natural and effective. These few slides draw sharp distinctions between touch, gesture and motion. All modes are important and the challenge is to blend them into a pleasing whole.

Company summary: BizWitz analysts are helping innovators in the field of touch, motion, and gesture select and focus on profitable market segments.
Afternoon Session: December 8, 2011 – Gesture/Motion Applications

Michael Klug, Chief Technology Officer, Zebra Imaging

Michael Klug received a Bachelor of Science degree from MIT in 1989 and a Master of Science degree from the Spatial Imaging Group at the MIT Media Laboratory in 1991. From that point until 1997 Mr. Klug worked as a Research Scientist at the Media Lab, focusing on design and development of 3D displays and holographic systems. In 1996 he co-founded Zebra Imaging, Inc., with the intent to develop practical holographic recording systems and display products to serve a broad variety of applications, including visualization, holographic optical elements, and information storage. Mr. Klug has served in various leadership roles within Zebra. Currently, as Chief Technology Officer, Mr. Klug is responsible for overall technology strategy and road-mapping, intellectual property development and management, and integration of R&D, business development, market research, and technology and product trajectories. With over 26 issued patents, he is recognized internationally as one of a handful of experts in the field of holographic imaging technology.

Company summary: Headquartered in Austin, Texas, Zebra Imaging designs, develops and manufactures full color, three-dimensional (3D) holographic display systems with a variety of visualization applications for both government and commercial markets. The company’s unique 3D technology provides a robust, cost-effective and accurately detailed medium to present operational and design plans in a natural, 360-degree viewpoint without requiring special goggles, glasses or other eyewear. Simply put, Zebra Imaging provides the visual sense of presence for enhanced communication, captivating entertainment and compelling analysis and decision making. Initial potential applications for Zebra’s dynamic holographic displays include training, simulation, situational awareness, security monitoring, petroleum exploration and visualization, medical imaging, computer-aided design development and review, and 3D visualization of general scientific, financial, and simulation data. The company is committed to partnering with software and hardware providers to collectively establish total product solutions for target markets where clear need for 3D display is growing, and data source content is rapidly increasing.

Describe the most important things that Zebra Imaging is working on related to the future of touch and interactivity: As humans, we have evolved to perceive and interact with our world, especially that portion within arm’s reach, volumetrically and three-dimensionally. The benefits of 3D extend well beyond sight, including touch, gesture, construction and manipulation with our hands and with tools. Zebra Imaging is providing display technologies and products, including integrated systems, that enable intuitive, accurate, and rapid tactile and visual integration, with correct, continuous, physically-accessible full parallax 3D from any viewing position. Whether for design, navigation, analysis, or presentation, Zebra’s technologies allow you to “put your finger in the photons” to create and manipulate spatially-distributed information and imagery in the most natural way possible.
**Kurt Hoffmeister, Co-founder; VP Research & Development, Mechdyne**

Kurt Hoffmeister serves as Vice President of Research and Development for the Mechdyne Corporation. Prior to the acquisition of Fakespace Systems in 2003, he served as Executive Vice President and a principal officer of the Mechdyne Corporation since co-founding that company in 1996. Mr. Hoffmeister is a recognized pioneer and worldwide expert in large-screen virtual reality and simulation system design, installation, and integration. A licensed professional engineer with several patents, he has a master’s degree in mechanical engineering from Iowa State University. Mr. Hoffmeister’s R&D responsibilities include the evaluation and implementation of new technology and A/V components into the solutions offered by Mechdyne. Mr. Hoffmeister has been involved in nearly every Mechdyne project for the past 15 years, serving in a variety of capacities, including Researcher, Consultant, Systems Designer and Systems Engineer. Mr. Hoffmeister’s previous experience includes 10 years in technical and management roles with the Michelin Tire Company’s North American Research Center as well as being an early employee and consultant at Engineering Animation, Inc. (now a division of Siemens) and a research scientist at Iowa State University.

**Company summary:** Mechdyne Corporation is one of the world's largest companies dedicated to consulting and development of turnkey advanced Audio Visual (AV), immersive 3D, networked, and collaborative visualization solutions. Mechdyne addresses complex projects where in-depth understanding of user requirements leads to the development of products and customized solutions involving elements of display, graphics computing, software, and professional services. Headquartered in Marshalltown, Iowa, with offices around the world, Mechdyne frequently provides solutions that include touch, interaction and motion capture technologies. Mechdyne serves a global customer base that includes leading government laboratories, Department of Defense organizations, energy companies, universities, research labs, medical, manufacturing, and many other market users who benefit from interaction technologies.

**Describe the most important things that Mechdyne is working on related to the future of touch, gesture and motion:** As a pioneer in the field of immersive technologies, Mechdyne has a long and rich history of solutions that incorporate advanced touch and interaction hardware as well as software. Not only are we very skillful in recognizing and adopting technologies that have already been introduced to the marketplace, but we are also experts in developing our own new technologies. For example, this year we have advanced motion capture technology to allow multiple users wearing motion capture suits to “step inside” a virtual human, or avatar, and interact directly with data from a much more realistic simulation perspective. This new level of motion capture support allows multiple participants in a virtual environment to collaborate and interact with their engineering designs, assemblies, and process simulations, all from a first person perspective. In the past year we have also developed an interactive Touch Table. This exciting solution is the first touch table-sized product on the market to offer stereoscopic imaging. With its simple table-like design, our new touch table puts the power of large screen; three dimensional viewing and high end compute capabilities, right at your fingertips. The design also incorporates head and hand position/orientation tracking. This unique feature and the realism of 3D, all combined with the simplicity of touch manipulation, creates a powerful yet easy to use solution that helps users make faster, better, and more effective decisions each and every time it’s used. The University of Iowa and Birmingham University in the United Kingdom are already using this innovative solution.
Roy Ramati, VP Sales & Marketing, Extreme Reality

Roy Ramati is VP Sales and Marketing at Extreme Reality. Formerly Roy was VP & GM Enterprise Division at SanDisk Corp. Prior to SanDisk/M-Systems, Roy was the founder and Co-CEO of Fantine Group, a provider of business development services for technology companies in the European market and a $25M VC. Prior to this Roy was a management consultant at Shaldor-Israel's Top-Management Consulting Firm. Roy holds an MBA from London Business School and a BA, Economics from Tel Aviv University.

Company summary: XTR is a leading innovator in the touch free user interface and gestures/motions control arena. XTR’s unique, patented technology is about real time extraction of 3D skeleton joints of full body, utilizing a standard low-cost camera and HW. XTR developed the Only software gesture control solution analyzing full body skeleton from the fingertip up-to full body skeleton, short, mid and long range, fingertip to full arm. Our solution deducts human body behavior resulting in full prediction of human body motions. XTR is enabling real time recognition of human motions and gestures in order to control any machine with a simple camera. Our Gesture/Motion Engine is cross platform and can be easily integrated into devices such as smartphones, Tablets, Laptops and PCs, as well as software based OS and applications such as games, training, teaching, shopping, medical etc. Our solution has the advantages of working with standard HW (work in day light, any range, and cost) while it is robust and accurate, and therefore can be implemented in a wide spectrum of products and applications.

Describe the most important things that XTR is working on related to the future of touch, gesture and motion: XTR3D see the future of gesture control as “simplicity” We believe that both the developers need an easy tool for gesture development, and the users the ability to enjoy full spectrum of gesture movements. XTR will provide full understanding of the human skeleton behavior and capabilities, which will result almost unlimited gesture control movements (without the need to program and analyze each movement by its own). As XTR3D gesture control engine is cross platform and software only solution, almost any consumer electronic device will be able to integrate gesture control and program the movements easily, defined and customized by the user.

Tom Armbruster, Vice President, Oblong Industries

Tom Armbruster is charged with driving new business development for Oblong with a focus on our high-end g-speak systems and custom applications built in the Spatial Operating Environment. Prior to Oblong, Tom was VP of Sales and Support at VICON Motion Systems, where he restructured the sales department and grew sales to record levels. Tom holds a degree in Mechanical Engineering from Western Michigan University.

Abstract: Oblong Industries is remaking the world of computers. Our technology transforms the way you work, create, and collaborate. The era of one human, one mouse, one screen, one machine is giving way to what’s next: multiple participants, working in proximity and remotely, using a groundbreaking spatial interface to control applications and data spread across every display. This is what Oblong builds. It’s why we’re here.

Company summary: Oblong Industries offers the world's leading tools for next-generation analytics, collaboration and complex systems management. Oblong's g-speak Spatial Operating Environment is a software platform designed from the ground up to support the development of real-time, big data, multi-user applications. Advanced Human-Machine Interface: Oblong's founder and Chief Scientist, John Underkoffler, designed the influential spatial user interface depicted in the film Minority Report. Oblong’s platform and products are the real-world
implementation of the Minority Report computers. Oblong's g-speak platform offers support for a wide variety of input devices:

- mouse and keyboard
- fixed touch screens
- mobile touch screens on tablets and phones
- web browsers
- spatial wands
- special-purpose, bare-hand gestural input
- full, general purpose gestural input with users wearing lightweight gloves

In today's demanding, big-data environments, the human-human interface is as important as the human-machine interface. Oblong's technology enables people to work together in new ways.

Describe the most important things that Oblong Industries is working on related to the future of touch, gesture, and motion:

**Gestural I/O** – The world of multi-participant, multi-machine, multi-display work is best driven by human hands: hands freed to work at full dexterity throughout a room's three-dimensional space. The platform's spatial interaction model permits 'action at a distance' via pointing and other gesture. Such high-fidelity input in turn demands a new genre of on-screen graphical constructs. These exist as a family of cooperating elements: glyphs that offer subtle feedback about recent, current, and possible future operator activities (who's doing what, and what's being affected); and standard visual patterns that express the evolving state of the application.

**Francis MacDougal, Senior Director of Technology, Qualcomm**

Francis MacDougal is the Senior Director of Technology at Qualcomm, who recently acquired a portion of GestureTek, where MacDougal developed and patented the company’s single camera, multiple camera and mobile gesture control technologies and led the creation of the application development engine, scripting language, and numerous other applications. As a specialist in real-time system design, embedded architectures, image processing and computer vision, Francis is now focused on Qualcomm’s mobile platforms.
Gideon Schmuel, CEO, eyeSight Mobile Technologies

Gideon Schmuel joined eyeSight with 20 Years of experience in the Telecoms and Enterprise Software markets. Gideon has been involved in growing technology organizations and running and establishing the business activities and operations of several companies across international markets. Most recently Gideon performed the role of VP Sales at cVidya Networks. Prior to that Gideon had a number of executive roles in a number of countries in Olista, Top Image Systems, LCR Telecom and Esprit Telecom.

Abstract: “Touch-free interfaces – across operating systems and devices” – Gideon will speak on the importance to create a solution that is wide and can support various devices and operating systems, as the market is divers in both aspects as the possibilities are endless. For touch-free interfaces to reach the mass market is dependent on creating a solution which is Natural and Intuitive to the variety of potential end users, in addition reaching the mass market is dependent on the ability of the gesture solution to support the variety of operating systems used in the market. Another important aspect for providing a solution with the potential to reach the mass market is tailoring the gesture user interface solutions for each of the various device use cases; a one size fits all solution will not do, the language of gestures used for far distance control cannot apply for use in close distance/handheld devices.

Company summary: eyeSight is a developer of gesture recognition technology for digital devices, providing gesture recognition and advanced object tracking as well as multiple user detection/ control, the technology is software based and required only a standard 2D camera (as low as VGA) compared to other solutions in the market eyeSight supports the largest range of operating systems, providing an SDK for easy integration into the device, the chipset level or even simply within application level. eyeSight is also the only solution with devices I the market from two sides of the spectrum; small handheld mobile phone for close distance gesture control and a smart TV with eyeSight's solution for multiple users and distance control. eyeSight's technology has been licensed and integrated by smartphone and TV manufacturers; Hisense recently launched and Android based smart TV with eyeSight's gesture recognition solution (Series XT710) , also, last week Pantech released the Vega LTE smartphone powered with eyeSight's gesture technology. eyeSight also is about to launch an additional series of touchless smartphones with another phone manufacturer as well as announced partnership with Huan TV to deliver gesture based games to the smart TV market in China.

Jonathan Josephson, Chief Technology Officer & IP Founder, Quantum Interface

Jonathan Josephson is the Chief Technology Officer and IP Founder of the pioneer in motion control interfaces, Quantum Interface (QI). His global patents for the use of motion for selection and attribute control are at the core of many human interfaces beginning to show up in multiple industries today. His diverse background includes music, engineering, architecture, and Governmental policies, processes and codes throughout energy, building and accessibility sectors. Jonathan volunteers for several Non-Profit Organizations, including the Lockhart Youth Soccer Association, Motion for Life, and the Coalition of Texans with Disabilities, and loves his wife of 18 years and three children. His passion is to change the world through the power of revelational vision, understanding, and innovation.

Abstract: We will describe the four kinds of interaction we currently use for electronics - buttons / keystrokes, verbal commands, gestures, and real, or simple, motion (gestures and real motion both fall under motion). We will
then explain the differences between the two kinds of motion and how both are necessary for the total interactive environment. We will also be sharing our presentation time with a representative from Wells Gardner Electronics, who will demonstrate a medical bed controller using QI technology. We hope to have another demo ready to show as well.

**Company summary:** QI designs, prototypes and develops IP based on its global patents for control systems that enable people to interface with their surroundings through intuitive motion controls. The motion-based technology patented in early 2002 is ideal for medical devices, lighting, plumbing, defense equipment such as UAV's, and likely any other markets where motion based controls are used. The benefits of this technology allow for a cleaner, safer environment through lack of physical contact in touchless applications and by removing physical hardware from the environment and replacing it with sealed, aesthetically pleasing and safer motion-based controls. We also have life changing designs currently underway, helping people with disabilities in the form of wheel chair controllers and environmental controls that have never before been possible. We provide rapid front end engineering for prototyping and proof of concept models, licensing contracts and business models, back-end engineering support for partners and Customization and Designer Series models specific to customer requirements.

**Describe the most important things that Quantum Interface is working on related to the future of touch, gesture, and motion:** We are working on the use of intuitive, simple, touch and touchless controls that will provide an easier interface for the ever-increasing devices and needs of society as we move more and more towards a mobile-centric lifestyle. Our controls will become the core of the most natural interfaces available due to using the only one-to-one interface available today - natural, real-time, intuitive motion. This is enhanced through the use of gestures and verbal commands to help provide the most realistic user experience possible in environmental, medical, military, entertainment and commercial environments. Our touch and touchless controls will truly help to make for a safer, cleaner and more friendly lifestyle.

**Yoav Hoshen, SVP Business Development, PointGrab**

Yoav Hoshen is Senior Vice President, Business Development at PointGrab. Mr. Hoshen has over 14 years of diverse international business experience in the high-tech industry, including expertise in sales, business development, strategy, marketing, product marketing, entrepreneurship and investments. Prior to joining PointGrab, Mr. Hoshen was VP Business Development & Sales of EPOS Technologies, a leading provider of advanced digital positioning technologies for the PC environment. Before EPOS, Mr. Hoshen served as Marketing Director of the largest business unit of Comverse Technology, a world leader in multimedia telecommunications applications. Earlier in his career, Mr. Hoshen was Director of Business Development Marketing at Orsus Solutions and Product Manager of ICQ (acquired by AOL). Mr. Hoshen holds an LLB from Tel Aviv University.

**Abstract:** “Towards a New Generation of User Interface - Motion Gestures Using 2D Camera” – Recent publications about motion gesture devices have indicated a possible transformation in User Interface. However, in order for such a transformation to occur there is a long list of requirements that need to be addressed. Such requirements are going far beyond gaming consoles (e.g. Microsoft Kinect). A key requirement is that the enabling technology for motion gesture recognition must be ubiquitous, running on a variety of platforms. Other key requirements include: dramatic price reduction, support in multiple OS, significant enhancement of the gestures vocabulary, and improved performance and reliability. In reviewing the current solutions for motion gestures, two primary classes emerge based on the underlying sensing technology: 3D (depth) cameras vs. 2D cameras. Each type of solution has its own advantages and challenges. Considering the requirements for the next generation UI it seems that gesture recognition solutions based on 2D cameras have a major role in making this shift.
**Company summary:** PointGrab Ltd. is a leading provider of advanced Hand Gesture Recognition Software using standard 2D cameras. The unique functionality and performance of PointGrab’s software allow operating devices from a distance using natural and intuitive hand gestures. PointGrab’s user-friendly solutions run on multiple platforms such as TVs, PCs, Smartphones, Tablets, and support a variety of operating systems. The software can be easily integrated through a simple, yet powerful, SDK with third party applications and UIs. PointGrab Technology:

- Works with standard 2D cameras (even with inexpensive black and white VGA cameras)
- Detects sophisticated hand gestures such as GRAB
- Allows for accurately controlling a cursor
- Detects two hands simultaneously (allowing gestures with two hands)
- Accurately detects and tracks hands individually for up 5 meters
- Works efficiently in different background and lighting environments.

PointGrab’s distinctive technology is designed for rapid integration into existing products, and is already commercially available.

**Describe the most important things that PointGrab is working on related to the future of touch, gesture and motion:**

- Enhance performance and reliability of hand gesture recognition
- Support in multiple platforms and OSs
- Expand vocabulary of hand gestures
- Support in integration with third party software

**Mark Lucente, Independent Consultant**

Mark Lucente is a visionary leader with 20+ years of experience in the science and technology of information and visualization. He has propelled cutting-edge technologies from conception to prototype to profit – guided by instincts sharpened during years in both agile start-ups and big corporations and seasoned by exposure to international business and manufacturing. Technologies include electronic holography, 3D displays, intelligent sensing systems; photonic materials & physics for photovoltaics and displays; intelligent energy management; online data services and customer interaction. Lucente most recently worked at Zebra Imaging as Director of Display Products. He’s also worked at CLP, ClassCo, Avero, Soliloquy, Columbia University, IBM Research, and the MIT Media Laboratory in a wide variety of research, technical management, and executive management roles.

*This photo of Mark Lucente was in Business Week, February 23, 1998.*
Touch International to Offer Factory Tour Following Touch Gesture Motion Conference

Please join Touch Gesture Motion Silver Sponsor Touch International for a short trip to its headquarters facility. Guests will be shuttled from the Hyatt Regency at 5:30 pm after the TGM Conference, to the northwest Austin factory for a tour of our newly-remodeled cleanroom and manufacturing facility.

Following the tour, guests will be fed a classic Texas fare before returning to the Hyatt at 8pm. To RSVP for the tour, please select the tour option when you register. If you have already registered for the conference and would like to participate in the tour, please contact Bonnie Buck at: bonnie.buck@imsresearch.com or Bob Perez at: bob.perez@imsresearch.com

For more tour information please contact Jamie Sewell at jsewell@touchintl.com
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- Works with hands or stylus
- High resolution
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- Maximal optical clarity
- No deformations over time
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Touch · Gesture · Motion

Moving interactivity from yesterday to today and into tomorrow.

Touch International

Shaping the way interactivity is used in specialized applications, Touch International helps device manufacturers bring engaging user interface systems to the vertical markets.

Join us December 7th at the Touch, Gesture, Motion Conference!

Touch International CEO, Michael Woolstrum, will discuss the adoption of touch in specialty and vertical markets, and examine the future of touch for these important interactive applications.

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