



OCEAN TOMO

A PART OF JS|HELD

Semiconductor Reverse Engineering Capabilities

OVERVIEW

People

- Our technical experts have many years of combined experience across different industry sectors at leading R&D institutions as well as independent analytical labs
 - Process development and integration
 - Packaging and materials
 - Advanced processing nodes and product technologies

Data

- Database of 25 years of analysis results accessible to our clients through our staff for every new project
- Covering major consumer electronics manufacturers and a wide range of semiconductor process nodes and technologies

Focus

- 20 years of experience analyzing semiconductor patents
 - Portfolio review to identify high value assets
 - Evidence of use demonstration for litigation and licensing support
- Track record in supporting clients in litigation/licensing of semiconductor assets
 - Leading semiconductor vendors in US, Japan, and Europe
 - Litigation law firms

PRODUCT AND TECHNOLOGIES

Our experience in reverse engineering and analysis across a wide array of products and technologies

Products

- Mobile Processors
- Display Panels
- Power Management ICs
- Memory
- Storage/SSD
- Sensors
- LEDs
- RF Devices
- Optoelectronic Modules
- Automotive Electronics

Technologies

- Advanced Process Nodes
- 3D Packaging
- OLED
- LCD
- Silicon Photonics
- Silicon Carbide
- MEMS

CAPABILITIES

We bring a wide range of capabilities to its semiconductor service offerings, including

- Teardown and Photo Documentation
- X-Ray Imaging
- Sample Preparation
- Die Level Imaging
- SEM Imaging
- TEM Imaging
- Materials Analysis
- Circuit Extraction

FEATURED ENGAGEMENTS

Cross Licensing Negotiation Support

- *In anticipation of renewal cross-licensing discussions with a major semiconductor competitor, Client A (an operating company) required a set of claim charts on the competitor's products to enhance their negotiation position*

We reviewed Client's portfolio for most promising assets and selected a set of high-value products for evidence of use analysis. We produced over 100 claim charts, primarily on the package and chip level, on the competitor's products.

The negotiations resulted in a 7-figure difference in the Clients' favor from the prior cross-licensing agreement.

Strategic Initiatives

- *As part of their corporate IP strategy, Client B (an operating company) wished to develop a portfolio of claim charts against a single process of a major wafer fabrication competitor*

We **identified a set of promising assets** from the Client's extensive patent holdings and **developed a set of over 30 claim charts** having global coverage, with focus on front-end and back-end processes, materials, and device structures.

Litigation Support

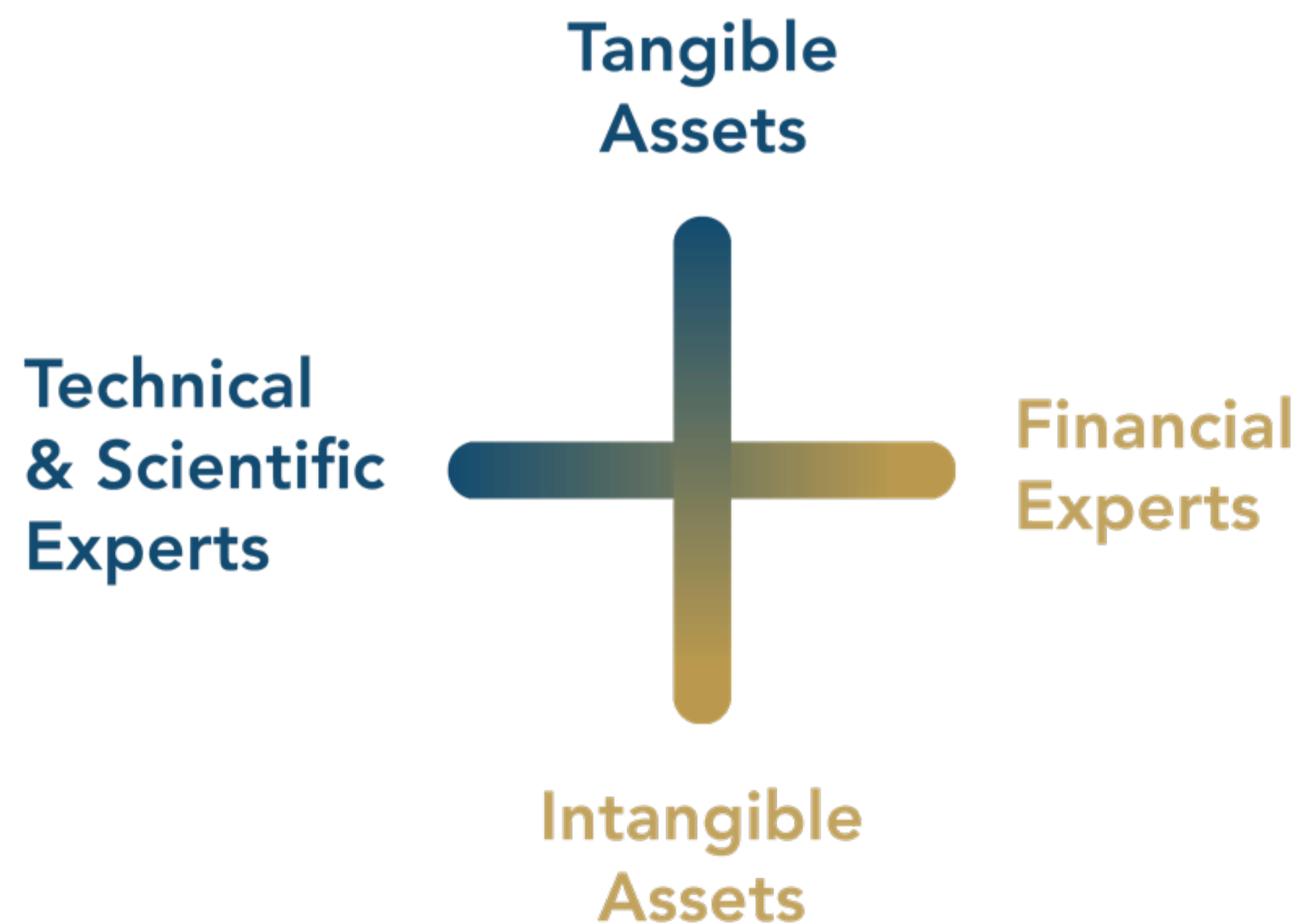
- *In support of their litigation case, Client C (a law firm) needed detailed materials analysis to demonstrate material composition of the junction between source/drain and contact regions in a FinFET device*

We **developed a set of tests** using a series of TEM sections and high-resolution EELS linescans and **determined the elemental composition of the junction region to sufficient detail to support Client's patent claims.**

OCEAN TOMO, A PART OF J.S. HELD EXPERTISE FOR THE INNOVATION ECONOMY™

Ocean Tomo and J.S. Held – technical, scientific, and financial experts in tangible and intangible assets protected by intellectual property.

Our financial market, scientific, and technical experts have deep experience with tangible and intangible assets protected by IP. We bring a **unique understanding** of the contributory value of proprietary innovation to every engagement. **This is the cornerstone of our business.**



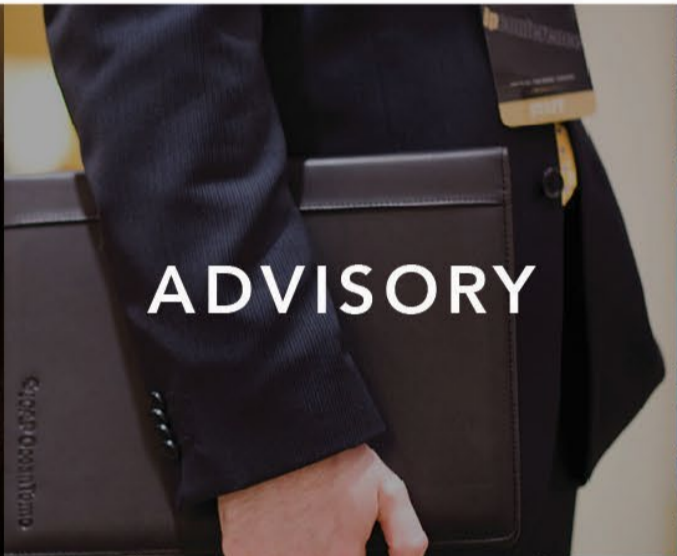



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SCOPE OF SERVICES

Ocean Tomo, a part of J.S. Held, provides Expert Opinion, Management Consulting, Advisory, and Specialty Services focused on matters involving intellectual property (IP) and other intangible assets. Our services are built upon more than three decades of experience assessing intellectual property in the most rigorous of venues.

As a part of J.S. Held, we work alongside **more than 1500 professionals globally** to assist clients – corporations, insurers, law firms, governments, and institutional investors – on complex technical, scientific, and financial matters **across all assets and value at risk.**

 <p>EXPERT OPINION</p>	 <p>MANAGEMENT CONSULTING</p>	 <p>ADVISORY</p>	 <p>SPECIALTY SERVICES</p>
<p>Damages & Licensing</p>	<p>Valuation</p>	<p>Capital Raising</p>	<p>Patent-Focused Business Intelligence</p>
<p>Domestic Industry</p>	<p>Strategy</p>	<p>IP Brokerage</p>	<p>Technology & Portfolio Development</p>

ABOUT J.S. HELD



J.S. Held is a global consultancy providing technical, scientific, financial, and strategic expertise across all assets and value at risk. Our professionals serve as trusted advisors to organizations facing high-stakes events demanding urgent attention, staunch integrity, clear-cut analysis, and an understanding of both tangible and intangible assets. The firm provides a comprehensive suite of products, data, and services that enable clients across industries to navigate complex, contentious, and often catastrophic situations.

CONTACT

Timothy D. Dorney

+1 214 364 9511

Timothy.Dorney@jsheld.com

Sam Wiley

+1 602 463 8260

Sam.Wiley@jsheld.com