

AIXSCAN, INC.

MEDTECH IP CASE STUDY

How a next-generation X-ray imaging company built a patent wall around ARC60 with PatentPC

INTRODUCTION

AIXSCAN, Inc. is a Sunnyvale, California developer of a next-generation, AI-based tomosynthesis X-ray imaging system. Its mission is to make advanced X-ray imaging broadly accessible through affordable, efficient, low-maintenance hardware, using AI to cut the human labor cost of imaging.

Its flagship system, ARC60, uses multiple pulsed X-ray sources in motion to perform ultrafast 3D radiography — a paradigm shift from conventional digital radiography and computed tomography, aimed at accurate diagnosis and longitudinal tracking of abnormalities. Target applications span lung cancer screening, general radiography, orthopedics, interventional therapy, veterinary 3D, and industrial nondestructive testing.

BACKGROUND

AIXSCAN was built by a deep bench: CEO Dr. Jianqiang Liu, a Caltech Ph.D., seasoned inventor, and business leader who took a previous company through an IPO; Dr. Manat Maolinbay, a flat-panel detector expert with more than 25 years in particle detection physics and X-ray technology; Dr. Jamie Ku, an MIT Ph.D. in nuclear science and engineering with two decades in complex system integration; and founding engineer Linbo Yang. A medical board including Yale diagnostic radiologist Dr. Christopher Gange Jr. and medtech veteran Dr. Tim James guides clinical direction.

That team faced a textbook medtech IP squeeze. Multi-source, source-in-motion tomosynthesis sits in a field dominated by GE, Siemens, Hologic, and Canon — incumbents with decades of X-ray patents and the legal budgets to enforce them. Every element AIXSCAN needed to protect was a system-level combination: pulsed source arrays, electron beam deflection, curved transport tracks, dynamic multi-leaf collimation, motion compensation, and AI reconstruction training.

Timing compounded the pressure. AIXSCAN began clinical trials in late 2023, planned more than 50 lung disease patient scans ahead of a 510(k) submission, and set a target of up to 1,000 patient scans within two years. Public clinical milestones and trade press coverage start prior-art clocks and tell competitors exactly where to look. Filings had to be in the ground before the announcements went out. Enter PatentPC.

“We were building the machine and the patent portfolio at the same time, with the FDA clock running. Filings could not be an afterthought — every new subsystem had to be covered before it showed up in a clinical result.”

LINBO YANG, PATENT COORDINATOR, AIXSCAN, INC.

LEADERSHIP

LINBO YANG

Founding Engineer & Patent Manager, AlxSCAN, Inc.

Linbo Yang has been with AlxSCAN since January 2020 as its founding engineer, building the next-generation ultra-fast, low-cost, motion-compensated X-ray tomosynthesis system hands-on from the bottom up — architecture, hardware, robotics, firmware, and software. He serves as the current technical contact for the LDA subcommittee of ASTM International's E07 nondestructive testing committee.

SOLUTION

What first set PatentPC apart is its seamless workflow integration With AlxSCAN's Internal Processes. We used another patent law firm and switched to PatentPC due to the fixed fee and ease of working with its principals. PatentPC adapts directly to AlxSCAN's internal disclosure, review, and approval cycles—no friction, no re-training, no disruption. Their intake structure mirrors AlxSCAN's engineering sprints and model-release cadence, allowing the in-house patent department to plug PatentPC into existing workflows without adding overhead. This alignment keeps filings synchronized with product timelines and ensures the internal team maintains full visibility and control.

PatentPC provides structured documentation, fixed-fee billing, and clear cost-mapping that integrate smoothly with AlxSCAN's internal accounting and legal operations. No surprise invoices, no ambiguous timelines, no administrative chaos. Their disciplined procedures make portfolio management, budgeting, capitalization, and audit preparation straightforward for the in-house patent department, strengthening operational efficiency across the organization.

PatentPC's work helped AlxSCAN with:

- Subsystem-by-subsystem coverage — separate families for source-in-motion geometry, beam deflection, collimation, transport, motion compensation, and AI training, so no single design-around defeats the portfolio.
- Filing ahead of disclosure — applications on file before clinical milestones and trade announcements went public.
- Physics-fluent drafting — counsel already conversant in tomosynthesis geometry and detector physics, so no education bill.
- Priority chaining — provisionals cascaded into utility filings as the ARC60 architecture evolved through build and trial.
- International reach — the portfolio extended abroad, with the transport-track family published in European national phase.

RESULTS

12+	2023–24	8+
US & INTERNATIONAL PATENTS GRANTED	GRANT WINDOW	INTERNATIONAL PATENTS

AIxSCAN now holds an issued US patent wall around ARC60 — layered so that the geometry, the mechanics, the optics, and the AI are each independently protected. Trade coverage of the ARC60 clinical program describes the system as patent-protected, which is the whole point: the claim is defensible when a hospital, investor, or acquirer asks for the file.

US PATENT	TITLE	GRANTED
11,617,556	Fast 3D radiography with multiple pulsed X-ray source tubes in motion	Apr. 4, 2023
11,617,557	Fast 3D radiography using multiple pulsed X-ray sources in motion with C-arm	Apr. 4, 2023
11,633,168	Fast 3D radiography by deflecting tube electron beam using electro-magnetic field	Apr. 25, 2023
11,771,387	Fast 3D radiography using multiple pulsed X-ray sources in motion	Oct. 3, 2023
12,042,310	X-ray multi-leaf dynamic collimation for source-in-motion tomosynthesis	Jul. 23, 2024
12,144,670	AI training with multiple pulsed X-ray source-in-motion tomosynthesis	Nov. 19, 2024

AIxSCAN saved in two directions at once. First, by working with experienced attorneys backed by a technology stack, it avoided paying outside counsel to learn tomosynthesis physics, and received applications with more technical depth on a far shorter cycle. Second, by making the change, AIxSCAN now pays less while receiving more accurate and more efficient patent services — with claim drafting and strategic advice still owned by its patent attorneys.

“PatentPC gave our in-house patent team exactly what we needed: speed, precision, and airtight protection for our AI pipelines. They understand how fast AIxSCAN moves—and they match our pace without ever compromising quality.”

LINBO YANG, FOUNDING ENGINEER, AIxSCAN, INC.

File before the clinical milestone, not after it.

PatentPC pairs experienced patent attorneys with practice automation so medtech startups can file broader, faster, and for less — keeping the portfolio ahead of trials, publications, and 510(k) disclosure. Talk to us about a portfolio strategy for your device.

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