PHOTONIC COMMAND TERMINAL

A Mini-Manhattan Project for Financial Infrastructure

Bloomberg-Funded Prototype Development Partnership

THE PROPOSITION

Be first to deploy the next generation of financial infrastructure.

Bloomberg funds an 18-20 month prototype development program that delivers:

1. A working photonic trading terminal running on validated 150-femtosecond technology

2. First-mover advantage in sub-microsecond financial compute

3. Exclusive early access to technology that competitors cannot replicate

4. Strategic positioning before the electronic-to-photonic transition accelerates

This is not a vendor pitch. This is an invitation to co-develop the infrastructure that will define financial computing for the next fifty years.

WHY THIS MATTERS NOW

AI Integration Wall

Real-time AI trading requires sub-microsecond response. Electronic infrastructure cannot deliver this at scale.

Hyperscaler Constraints

AWS/Azure power and cooling rationing limits financial compute capacity in tier-1 districts.

Sovereign Compute Mandates

Post-Ukraine geopolitics demand data sovereignty infrastructure that IP-based systems cannot provide.

Photonic Inflection Point

150fs switching validated at Technion. For the first time, photonic compute is economically feasible.

WHAT WE'VE PROVEN

Independent validation, not claims. Physics, not promises.

150-200fs
Switching Speed

Validated at Technion Israel
Report #9105027635

3-4x
Faster Than Prior Art

Previous literature best:
600 femtoseconds

18
Patents Filed

800+ claims across
photonic computing stack

Technical Validation Completed:

• Pump-probe spectroscopy at Technion confirming femtosecond switching times

• Complete Boolean logic family demonstrated (AND, OR, NOT, XOR, NAND, NOR, XNOR)

• Von Neumann architecture compatibility enabling existing software migration

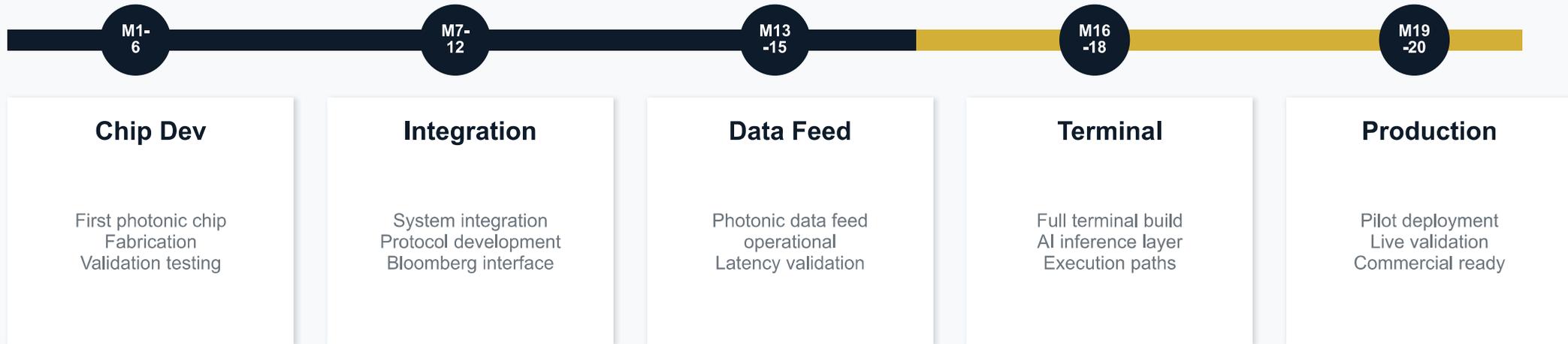• TCP/IP-L protocol stack designed for deterministic photonic routing

THE PROTOTYPE PROGRAM

An 18-20 Month Mini-Manhattan Project: Five Integrated Workstreams

1 **Terminal Interface**

Unified trading console replacing fragmented Bloomberg workflows

25%

2 **Photonic Data Engine**

Real-time market data at sub-microsecond latency

20%

3 **AI Inference Core**

Native photonic AI for risk models and trade optimization

20%

4 **TCP/IP-L Integration**

Deterministic routing and sovereign isolation protocols

20%

5 **Execution Layer**

Light-speed order placement with zero jitter

15%

PROGRAM TIMELINE

18-20 Month Development Program — Chip First, Then Rapid Integration

| M1-6 | M7-12 | M13-15 | M16-18 | M19-20 |

Chip Dev

First photonic chip
Fabrication
Validation testing

Integration

System integration
Protocol development
Bloomberg interface

Data Feed

Photonic data feed
operational
Latency validation

Terminal

Full terminal build
AI inference layer
Execution paths

Production

Pilot deployment
Live validation
Commercial ready

Key Milestones

Month 9: First photonic chip validated — core technology proven at scale
Month 12: System integration complete — Bloomberg interface layer ready
Month 13: First photonic data feed operational — latency benchmarks validated
Month 16: Full terminal prototype — AI inference and execution paths live
Month 18: Pilot deployment ready — initial production capability
Month 20: Full production deployment — commercial operations (if needed)

INVESTMENT STRUCTURE

$15M
Prototype Development
18-20 Month Program

Fund Allocation

Core Platform Development	40%	$6.0M
Protocol Engineering	20%	$3.0M
Photonic Integration	15%	$2.25M
Security & Compliance	10%	$1.5M
Data Partnerships	10%	$1.5M
GTM & Talent	5%	$0.75M

What Bloomberg Receives

Exclusive Early Access

18-month head start before competitive availability

Co-Development Rights

Input on features, priorities, and integration architecture

Licensing Options

Preferential terms for commercial deployment

IP Participation

Joint patent rights on Bloomberg-specific innovations

Context: Bloomberg generates $15B+ annually. This investment represents <0.1% of annual revenue for transformational technology access.

THE PHOTONIC ADVANTAGE

Why Bloomberg cannot build this internally — and why competitors cannot follow.

Metric	Bloomberg Today	PCT Photonic
Processing Latency	1-5 milliseconds	<1 microsecond (1000x)
Security Model	Software encryption	Physical light-path isolation
Data Sovereignty	IP-based routing	Programmable isolation domains
AI Integration	External cloud calls	Native photonic inference
Energy Efficiency	Standard electronic	90%+ power reduction
Cooling Requirements	Water/HVAC intensive	Standard office HVAC

These advantages are physics-based, not engineering-based. Bloomberg would need to rebuild their entire platform from first principles — a multi-billion dollar, multi-year effort that would destroy current revenue while we capture market share.

RISK MITIGATION

Structured to protect Bloomberg's investment at every stage.

Technology Risk

Core physics already validated at Technion. Integration risk remains but switching speed is proven Retested in True Photonic's lab

Mitigated

Execution Risk

Milestone-based funding with quarterly gates. Bloomberg can exit if milestones missed.

Structured

Competitive Risk

18-month exclusivity window. First-mover advantage compounds with network effects.

Protected

Integration Risk

Von Neumann compatibility means existing software works. No wholesale rewrite required.

Addressed

STRATEGIC CONTEXT

The electronic-to-photonic transition is not a question of if, but when — and who leads.

Geopolitical Imperative

Sovereign compute mandates are accelerating globally. The infrastructure that powers financial markets in 2030 will either be American photonic technology or Chinese alternatives. **There is no status quo option.**

Infrastructure Positioning

Clean Compute Centers can deploy in urban cores where traditional data centers cannot. Photonic infrastructure next to stock exchanges eliminates the latency advantage that has driven financial infrastructure to remote locations.

The Choice: Bloomberg can lead this transition or react to it. Leading costs $15M. Reacting costs market position.

INTEGRATION APPROACH

We work with your teams, not around them.

Bloomberg has 9,000+ engineers maintaining a sophisticated C++/Python/JavaScript stack with tens of thousands of projects and 2,000+ libraries. **We don't replace that investment — we accelerate it.**

Upon demonstrated interest, we will form a dedicated interface team to work exclusively with Bloomberg engineering, supported by our senior scientists. **Your teams maintain control. BLPAPI remains unchanged. Only the underlying compute layer transforms.**

Integration Principles

Your Code, Our Compute

Bloomberg maintains full ownership of application code. We provide photonic infrastructure and compilation toolchains.

API Compatibility

Existing BLPAPI integrations (C++, Python, Java, .NET) continue to work. No client-side changes required.

Dedicated Interface Team

We form a dedicated team to work exclusively with Bloomberg engineering, backed by our senior scientists.

Von Neumann architecture compatibility means existing software compiles for photonic execution without wholesale rewrite.

NEXT STEPS

1 **Technical Deep Dive**

60-day technical validation period with Bloomberg engineering team access to our lab, documentation, and validation data.

2 **Term Sheet**

Structured investment with milestone gates, IP provisions, and exclusivity terms. Draft available within 2 weeks of intent.

3 **Program Launch**

Joint team formation and program kickoff targeting Q2 2026. 18-20 month clock starts at funding close.

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