OPTICAL-ENGINE ARCHITECTURE REVIEW

Resolve the next optical-engine decision.

Before committing to a terminal design, compare the wavelength, power and integration choices that determine how much useful data it can deliver.

Mission case	Architecture variants	Planning basis
One	Up to three	4 weeks / $12,500

A fixed-scope architecture study for terminal OEMs, mission integrators and government R&D teams. Scope, schedule and price are confirmed in a written proposal after the fit review. Schedule begins after the agreed inputs are available.

Three engineering questions

Decision	What the review examines
More wavelengths, or a higher rate per wavelength?	Usable payload, optical-power allocation and the assumptions needed to close each candidate link.
Where is the margin going?	Propagation, pointing, receiver and integration assumptions; which uncertain input could change the decision.
What should the first hardware test settle?	The measurement, baseline and acceptance question that should guide the next prototype.

Built for your design review

Architecture comparison. Up to three agreed variants, common inputs and explicit differences.

Editable model. Input register, units, calculation basis and sensitivity; assumptions labelled.

Decision memo and test definition. Recommendation, reversal conditions and next evidence.

Technical review. Review with your engineers and one consolidated revision within scope.

Focused on the engine. Accountable for the evidence.

SpaceWDM brings terrestrial DWDM experience, reproducible modeling and mission requirements into the same engineering review. Founded by Lloyd E. Clark, PhD, with Ciena DWDM experience, Tellium technical training and federal systems engineering experience.

Current status. SpaceWDM is a research-stage optical-engine company. Architecture models and test software are developed; laboratory hardware remains under development. Product performance and customer design wins are not yet established.

ILLUSTRATIVE DECISION MEMO

A decision your engineers can inspect.

Does a second wavelength justify its integration cost?

Memo element	Example structure
Comparison	One-channel and two-channel candidates under the same mission geometry, total optical-power constraint and definition of useful payload.
Decision test	Determine whether aggregate delivered payload improves after multiplexing loss and per-channel receiver margin are accounted for.
Evidence to resolve	Actual integration loss, receiver operating envelope, power allocation and measured payload delivery under agreed conditions.
Result format	Recommended candidate, sensitivity to unresolved inputs, and the measurement that could change the recommendation.

Illustrative template only. This shows the decision logic and evidence structure. It contains no customer data, measured performance or completed architecture-study result. A scoped study replaces the template with your requirements and analysis.

One offer, three buying paths

An OEM can use the study to evaluate an engine interface; a mission integrator can use it to compare link architectures; a government R&D team can use it to define a testable development question. Each engagement remains one mission case, up to three variants and an inspectable engineering handoff.

The engagement covers architecture analysis. Hardware purchases, laboratory measurements, coherent-modem development, qualification and standards certification are separately scoped.

Start with a 20-minute fit review

Send a high-level summary of three inputs:

Input	What to send
01 / Decision	Your mission and the engineering decision you need to make.
02 / Payload and range	Target delivered payload and link range.
03 / Constraints	Known aperture and power limits, or what remains unknown.

No detailed drawings are needed for the first conversation. Use a high-level, non-sensitive summary; detailed technical exchange can be scoped separately.

Lloyd E. Clark, PhD
lc@federal.ai
spacewdm.com/evaluation.html