

THGM DoD SBIR Phase I Red-Team Review

TECHNICAL REVIEW & DUE DILIGENCE

PROBLEM

A technically plausible Phase I concept risked being scored as speculative because its transduction mechanism was asserted rather than shown as a closed causal chain.

WORK

The review decomposed the mechanism link-by-link, separated physics risk from proposal-framing risk, mapped reviewer kill factors, and specified the evidence and rewrites needed before submission.

OUTCOME

Proceed after targeted mechanism and transition-path repairs; the central feasibility question becomes a bounded, falsifiable Phase I test.

REPRESENTATIVE CONTENT

- Mechanism chain: DDS → piezoelectric drive → acoustic field → nonlinear mixing → electrokinetic coupling → telluric EM response.
- Scoring matrix distinguishes technical merit, feasibility, mission alignment, and transition risk.
- Each identified risk is paired with a closure action rather than a generic recommendation.