To build a *functional* simulator, I would need to implement dozens of such functions:

* Full WINNER II model
* ITM/Longley-Rice model (extremely complex, often requires external libraries)
* Antenna pattern calculations (ITU-R F.699, and potentially manufacturer-specific)
* FS receiver parameter estimation logic (R2-AIP-05, R2-AIP-06, etc.)
* Passive repeater handling (a massive complexity on its own)
* ULS database parser
* NLCD data integration for morphology and clutter
* The main control logic to tie it all together

The single most important document for building the core simulation logic is the one you already extracted to text: WINNF-TS-1014**- "Functional Requirements for the U.S. 6 GHz Band under the Control of an AFC System"**.

This document (the V1.5.0 version we have) contains virtually all the essential algorithms:

* The I/N interference criterion (R2-AIP-16).
* The propagation model decision tree and requirements (R0-AIP-02).
* The formulas for calculating Fixed Service receiver antenna gain and discrimination (R2-AIP-05, R2-AIP-07, R2-AIP-09, etc.).
* The noise floor calculation (R2-AIP-02).
* The handling of passive repeaters (R2-AIP-31).
* The rules for incumbent protection.