

Built against a mock. Proven against the national system.

A live eligibility check against SII, Italy's national energy-market data system, for an energy retailer's back office. **An operator types a supply-point code and learns in well under a second whether it can be taken on.** The first REST integration with a system that otherwise speaks SOAP and bulk files, finished and tested months before the credentials to call it arrived. Part of wider, ongoing SII work on the same platform.

MEDIAN RESPONSE	TEST SUITE	AUTHENTICATION	WAITING ON ACCESS
369 ms 49 real calls, test environment	~300 tests 99% coverage when written	2 layers mutual TLS and a signed JWT	4 months with the build already done

THREE DECISIONS

01 Building the national system before having access to it

A mock of the national service, where the last digits of the supply-point code choose the outcome: success, each official rejection, and a flaky range that fails twice to exercise retries. The client, operator screen and test suite were finished against it. It was wrong in five places, each found only against the real system.

02 Proving whose problem it was

The first real calls failed authentication. Ten variants of the token header all failed identically, which showed the certificate had not been registered on the operator's side. The wait was four months either way; none of it was spent rewriting working code.

03 A synchronous call, with the retries inside it

No queue and no polling: the answer arrives on the same screen, with three attempts and backoff for transient failures. Every request leaves an audit row with who asked, what was sent and what came back, token masked.

Access to a regulated system arrives on someone else's calendar. The work can still be finished, tested and ready when it does.

STACK	PHP 8 · Laravel · Filament · Oracle · Docker · REST over mutual TLS with RS256 JWT · Python, Streamlit, SQLite FTS5
NOTE	<i>Client withheld. Figures are from the national test environment and the test suite; no production figures are claimed.</i>

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Full case study, with the call path, the findings and the documentation tool: richardtrujillo.desemax.it/case-studies