

~~(S)~~ NATIONAL RECONNAISSANCE OFFICE

WASHINGTON, D.C.

THE NRO STAFF

12 August 1974

MEMORANDUM FOR DR. COOK

SUBJECT: RAQUEL II Vs Intelligence Community

The NRO does not normally request intelligence community approval of a satellite design or concept. We do coordinate with the community and individual agencies to refine requirements, determine if proposed capabilities will satisfy requirements, etc.

The RAQUEL II (or whatever it is ultimately named) design concept evolution has been particularly attuned to community requirements and the community has had considerable influence (primarily through requirement refinement) on the current concept.

Although power measurement/radiation pattern requirements have existed for some time, past technical intelligence collection satellites have not included the capability to measure the necessary parameters. We have emphasized frequency, pulse width, PRI, etc. (The exceptions are MABELI which has a very limited frequency range, and POPPY where the SLM capability is inadequate.)

In response to the SAL Treaty's power aperture product limitation provisions, the SORS/SIGINT/USIB hastily added a high priority but poorly stated (and thought out) power measurement for treaty monitoring requirement to the Five Year Plan in 1973. Based on this, SP proposed a concept which utilized a new P11, [] and []. Due to ambiguities in the requirement (e.g., frequency range), probability of intercept of treaty limited emitters, and impact on [] we asked the SIGINT Committee for clarification of the requirement and provided details of the [] concept. The Committee "rejected" the concept and agreed to investigate the requirement (in reality they agreed that the requirement was poor). Both the intelligence community and the NRO/SP went back to the drawing boards.

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During development of the Five Year Plan in 1974, "power" monopolized committee discussions. In effect, the original requirement was split into requirements for collection of emitter parameters including power/radiation pattern related parameters for technical intelligence, and treaty monitoring. (The significance of the first requirement in respect to a treaty monitoring capability was noted). The SIGINT committee accepted the TI requirement but split on the monitoring with CIA supporting a strong monitoring requirement and the rest of the members (for various reasons) questioning the requirement. At USIB, the monitoring requirement was relegated to the "study" category. The DCI indicated that the community should also study the monitoring issue and possibly seek relief from the requirement.

Based on their own engineering study and intelligence requirement inputs forwarded by the staff as the community's deliberations progressed, SP continued evolution of the hardware concept through to RAQUEL II.

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RAQUEL II responds to the TI requirement, it may assist in attacking the monitoring problem (but this is somewhat incidental).

The RAQUEL II concept and engineering details have been developed with full NSA participation. The frequency range was coordinated with applicable individuals at CIA and modified on their recommendation. The DIA alternate SORS member attended the RAQUEL II briefing presented by SP to the Staff in June (I believe the briefing was over his head).

Although the intelligence community has not designed RAQUEL II (that is probably the last thing we want to let them do), I believe the proposed vehicle is a good response to the technical intelligence requirements (power related and others) stated by USIB.

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