a) *Signal-to-Noise Ratio: Problems of Terrain and Traffic*

A verification system that included early warning stations (linked to networks of unattended ground sensors) situated in the Fulda Gap or along the intra-German border would be subject to several different kinds of "clutter" not found in the Sinai environment. For example, while the SFM had to identify and distinguish among sensor activations triggered by vehicles and nomadic Bedouin tribes in a relatively barren environment, early warning detection systems placed along the Fulda Gap/Intra-German border would need to cope with multiple "noise" sources emanating from surrounding mountains, rivers, and forests as well as from human activity such as the vehicular traffic of nearby communities. From an operational standpoint, separating "true" signals (serious indications of breach of compliance) from surrounding "noise" could prove very difficult. The overall success of the verification system would clearly depend on keeping the false alarm rate within manageable limits.[52]

b) *The Problem of Defensible Borders*

In the European setting, the problem of defensible borders is exacerbated by dynamic technological innovation which manifests itself in highly mobile and accurate dual-capable weapons systems. Central Europe is the most militarized region in the world as well as the repository of the world's most advanced military technology. Parties contemplating participation in a disengagement and verification scheme would need to assess the impact of technological developments (particularly, highly accurate long-range stand-off weapons and the possible introduction of biological and chemical weapons) on weapons and forces deployed to the rear of demilitarized zones, penetrability of borders, the mobility of forces in peace-time and in crisis, and intelligence gathering. Most important, potential participants would need some assurance that the verification system itself could cope with interference (both intended and unintended) and could adjust to the deployment of new weapons systems so as not to reduce warning time or incrementally erode the verification mission over time.[53]

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[52] Depending on the local topography where the verification system is situated, surrounding noise and clutter may be so great as to continually activate ground sensor systems, thereby degrading their operational utility and effectiveness. To make this problem more manageable, redundant ground sensor systems and watch-stations are required along with sufficient aerial and space surveillance to "double check" the findings of the verification system's other components.

[53] It is important to note that the variable of technological dynamism, particularly as it influences the effectiveness of early warning systems (and associated sensor packages) over time, may be more critical in the European context than in any of the other cases examined here. In Central Europe, the presence of dual-capable weapons systems, the rapid modernization of existing weapons systems and the sheer size of opposing standing forces suggest that verification systems designed for this setting must be far more responsive to the demands of changing technology than might be the case in certain third world settings where the rate and scope of technological change is not nearly so pronounced.