

EXHIBIT Number 1

Narrative Description Of Research

Transcrypt International is one of the largest manufacturers of analog voice scrambling equipment for use in two way land mobile radio. Scramblers which we presently offer use rolling code frequency inversion to render the speech unintelligible. Our scramblers use phase shift keying (PSK) to establish an initial synchronization between transmitter and receiver, and then use periodic PSK bursts to maintain synchronization. This scheme works very well for the vast majority of two way land mobile applications, but is not as well suited for certain applications where variable delays may be introduced into the signal, such as multiple voting systems.

To overcome the limitations of our present synchronization method, we are developing a scrambler which uses a continuous in band PSK signal to provide constant synchronization and late entry capability. The PSK signal is filtered out at the receiver so it is not audible in the recovered speech. This scrambling technology is being developed for use in Johnson MultiNet trunking systems, although it will find application in other systems as well.

To adequately field test this new synchronization technique, it is necessary to conduct extensive field testing under real world situations. Because there is no MultiNet system in Lincoln, Transcrypt desires to license a MultiNet trunking system on an experimental basis to conduct such tests.

Our research has an excellent chance of success, since we already have continuous sync scramblers working in the laboratory. We also have obtained the necessary radios from Johnson and are ready to put them on the air as soon as we are licensed.

The development of a continuous sync analog scrambler represents a new level of scrambling technology. Such a device is not available from any vendor at this time, and we believe ours will be the first. This scrambler will allow high security analog scrambling in systems which presently cannot be equipped with rolling code scramblers due to variable time delay in the system. Thus we feel that the granting of our license request would allow an extension of the radio art along lines which have not already been investigated.

We request that this entire exhibit be withheld from public inspection under the provisions of part 0.459, on the basis that it contains proprietary information which could be used to an advantage by our competitors. If this is unacceptable, please allow us to resubmit this exhibit with the specific information regarding our scramblers deleted.



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EXHIBIT 2

Vertical Profile Sketch

