

IAA-01-IAA.9.1.03

SETI-ITALIA: STATUS REPORT

S. Montebugnoli

E-Mail: Stelio@ira.bo.cnr.it

Phone: ++39 051 6965827

Fax: ++39 051 6965810

A. Cattani, A. Maccaferri, G. Maccaferri, J. Monari, S. Mariotti, A. Scalambra

(Cattani@ira.bo.cnr.it, maccaferri@ira.bo.cnr.it, Jmonari@ira.bo.cnr.it,

mariotti@ira.bo.cnr.it, scalambra@ira.bo.cnr.it)

Phone: ++39 051 6965811

CNR - Institute of Radioastronomy

PO Box 14 - Via della Fiorentina

40060 Villafontana, Bologna, ITALY

Observations within the SETI program have been started at the Medicina (I) radio telescopes since March 1998 by means of a SERENDIP IV module in a 4-million channel configuration. In 1999 the system was upgraded to 24 million channels with substantial support from the SETI Institute. Up to now, observations in piggyback mode have been carried out at the 32 m VLBI dish antenna in the radio astronomical bands included in the 1.4 - 23 GHz range. A more flexible and expandable version of the data post processing procedure (SALVE II), including a new pattern recognition algorithm based on the Hough transform, has been designed and usefully introduced in the data process scheduler. After the application of the SALVE II procedure to the already acquired data, no evidence of ET signals has been obtained.

In order to increase the detection possibilities, KLT (Karhunen Loeve Transform) along with RFI mitigation techniques are under evaluation. Simulations devoted to these tasks (with the AutoSignal 1.5 software package) are in progress. Final tests will be carried out with an expandable fast Mercury Altivec CPUs cluster (VME) that will be assembled within September 2001. This powerful number crunching system will be modular and expandable at up to several hundreds of CPUs. Our plan is to expand it up to 8 CPUs. In the future, the system will work in parallel with the SERENDIP IV spectrometer.