

Monthly Progress Report
SPIRE Test Facility and Scientific Support

Contract Number: 9F007-020251/001/SR
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Part 1

1. Is the project on schedule? **Yes.**
2. Is the project within budget? **Yes.**
3. Is the project free of any areas of concern in which the assistance or guidance of Canada may be required? **Yes.**

Part 2

Task 3.1: Provide SPIRE Test Facility FTS

- A sporadic error with the linear stage from Aerotech has been identified and reproduced by Aerotech engineers. A software patch for this problem has been provided by Aerotech and successfully integrated in the system at the University of Lethbridge. A fully fledged metrology test cycle of the linear stage will be necessary to validate the quality of the data recorded by the linear stage. A comprehensive test cycle is currently under development.
- Ian Schofield has revised the Test Facility Data ICD document and version 1.1 will be published as soon as it has been approved by Victor Zilinskas (CSA).
- Greg Tompkins from the electronics shop at the University of Lethbridge has created an interface box to provide a means for the time synchronization between the test facility FTS and the Data Processing Unit. It includes a custom-built 32bit counter driven by the 315kHz signal from the slow interface, logic to capture and execute the reset command within less than 3 μ s, and a stack to provide the current count value to a Windows request. Respective documentation will be provided.
- Frank Klassen from the machine shop at the University of Lethbridge manufactured the stainless steel rings and mounts for the beamsplitters. The services of an external machine shop are needed to cut the stainless steel rings.
- The IR-detector suffered failure during shipping. The detector is a necessary element to test the Test Facility FTS at the University of Lethbridge before shipping it to the UK. It has been sent for repair to the University of Cardiff.
- An off-axis parabola mirror cannot be supplied by the identified vendor as planned. The same mirror has been re-ordered from alternate sources.
- A security system (intrusion alarm, motion sensor) has been installed in the SPIRE lab at the University of Lethbridge to avoid vandalism.

Task 3.2: Provide SPIRE Data Analysis Software

- Trevor Fulton has started to work as a software engineer at the University of Lethbridge. He is running a seminar in IDL to familiarize the research group with the IDL programming language which will be employed for the development of the data analysis software during the CQM test phase. Teaching sessions will be made available for external use electronically.
- Kris Dyke has started to work on the project as a coop student at the University of Lethbridge. He brings expertise in Java development to the project and is currently familiarizing himself with the SPIRE project and the IDL programming language.
- A Technical Note is under development to provide detailed specifications for all user interfaces relevant to operate the Test Facility FTS. The main part of the development of this software will take place at RAL and it is therefore crucial to reach a common understanding on the functionality and appearance of the software involved.
- An integrated software environment is in the process of being established at the University of Lethbridge to simulate the operational conditions at RAL during the Instrument Level Test phase. The goal is provide an operational Herschel Common Software System and Electrical Ground Support Equipment to allow for end-to-end tests of all relevant software components before the test phase in the UK.

Task 3.3: Canadian SPIRE Team Support

- Nothing to report.

Task 3.4: SPIRE ITT and ICC Support

- A short list of five very strong candidates has been created, references have been contacted, and telephone interviews between Matt Griffin (Cardiff), Bruce Swinyard (RAL), David Naylor, and Peter Davis (University of Lethbridge) have been conducted. The positions were offered to two suited candidates.
- Samuel Ronayette (Avon, France), the favored candidate for the ITT position has accepted the offer and will start work on February 17, 2003.
- The answer from Sarah Leeks (Cardiff, UK), the favored candidate for the ICC position, is pending.