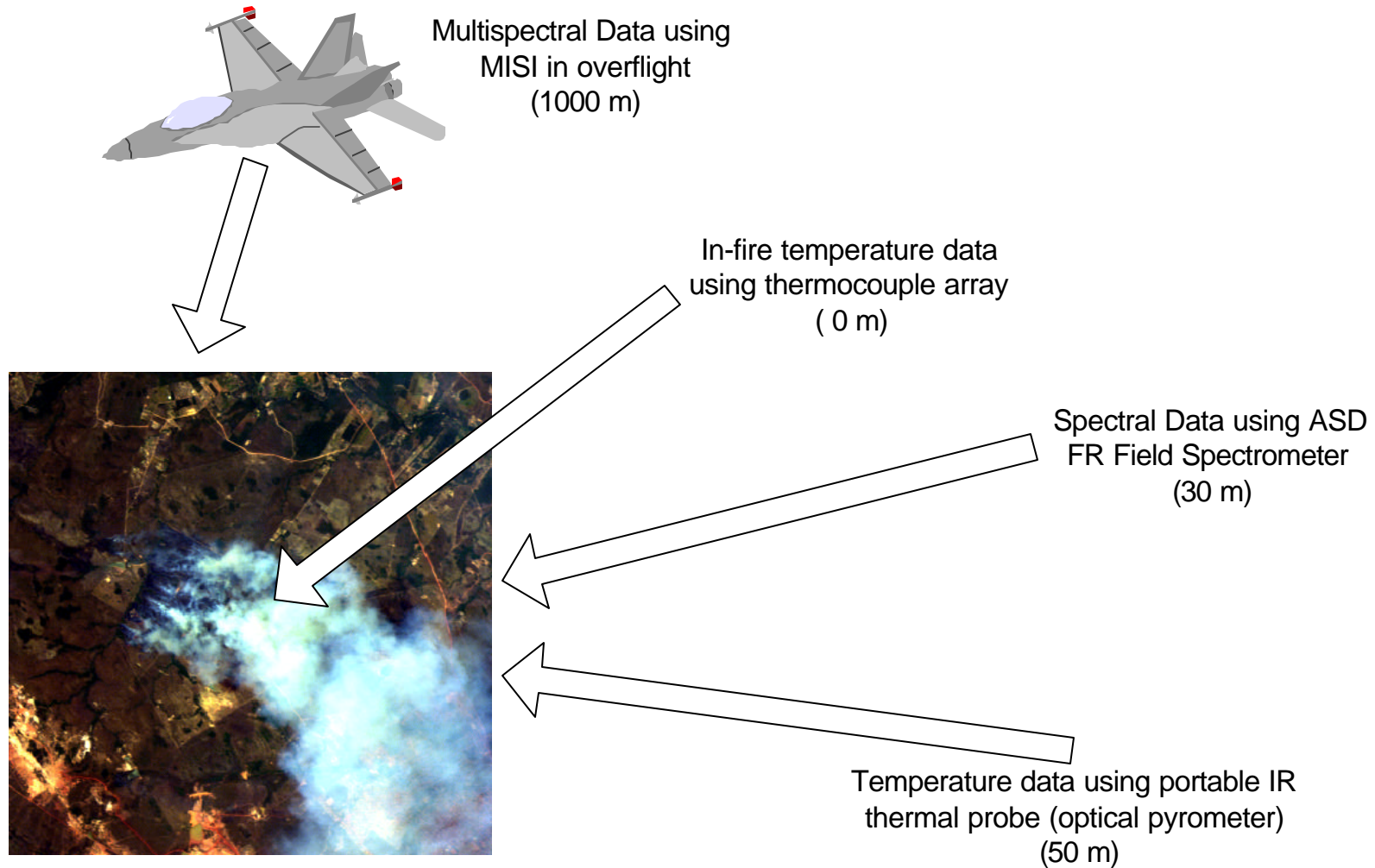


# The FIRES group would like access to the controlled burn without undue interference



# The FIRES group at RIT has several broad study goals

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- **Determine the temperature range of fires and burn scars directly (probes in the fire front) and through IR emission measurements.**
- **Determine the time rate of change of temperature for typical burn scars.**
- **Characterize the spectral properties of fires across the visible spectrum through the IR (400 nm - 13  $\mu\text{m}$ ) using portable spectrometers and aerial hyperspectral imaging cameras.**
- **Understand operational aspects of the fire fighting and control mission.**

# The instruments are portable and most have a large standoff distance



- **What is the closest approach distance to the fire?**
  - Would like fire to fill the optical field (0.5 degree) of spectrometer instrument
  - Fire size determines stand-off distance (~1.7 m at 100 m standoff)
- **The instruments are field portable and do not require special utilities (water, power, etc.)**
- **The thermocouple array would be situated in the soil or on plants in the fire path**
  - Monitor peak temperatures and burn temperature as a function of time, including post-fire (burn scar)
  - Up to 100 m stand-off
- **The optical pyrometer has a long standoff and is simple to operate**