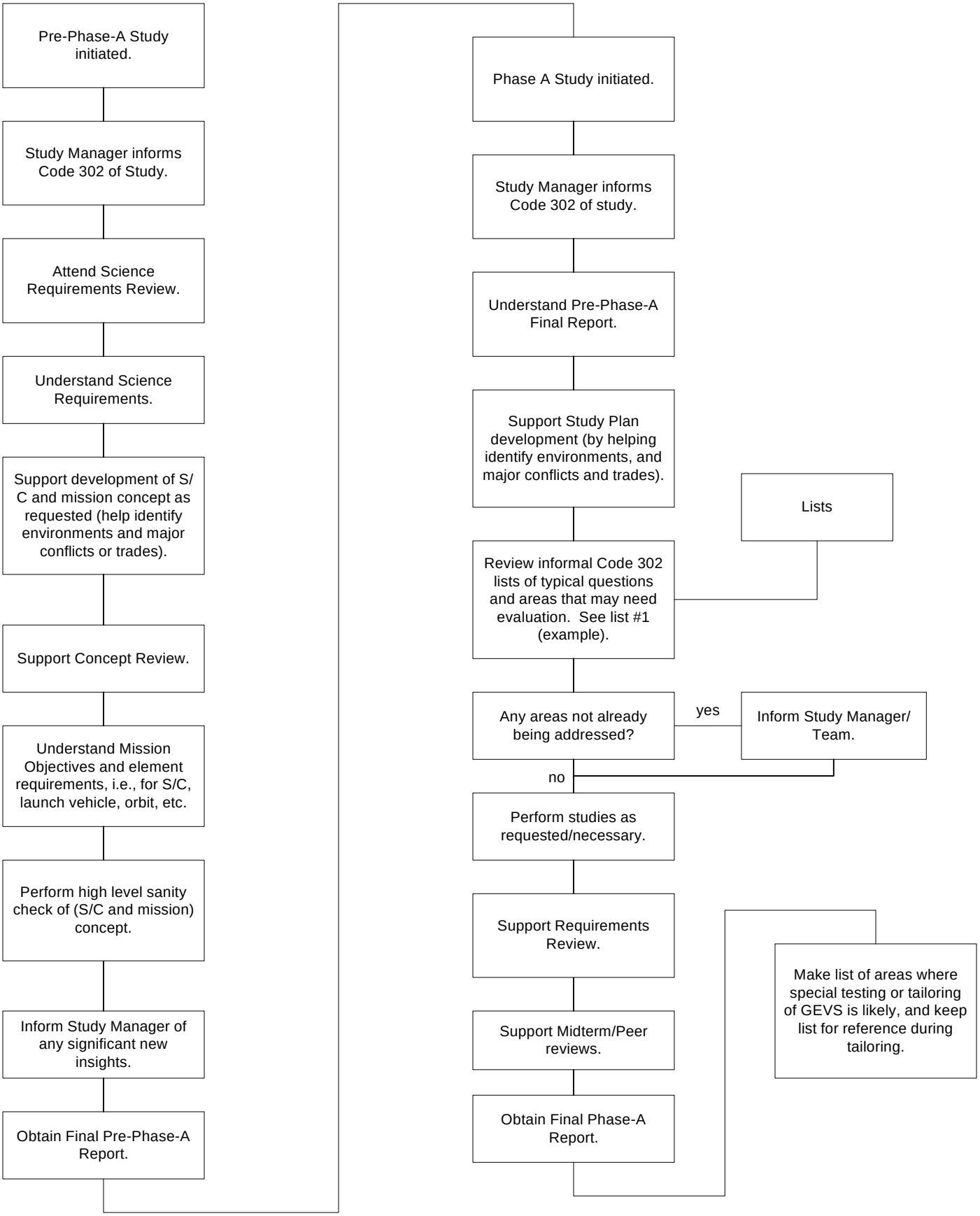
Procedure for Evaluating Mission Objectives and Environments

A. Flow chart of the implementation of the procedure from the perspective of Code 302:



B. Purpose of the procedure -

1. Document the steps taken in evaluating mission objectives and environments.

   a. This procedure should be useful as a checklist.
   b. This procedure should be useful for new employees.

C. Scope of the procedure -

This procedure applies to the System Reliability and Safety Office environmental verification group in performing support functions to GSFC missions.

D. Reference documents -

1. GEVS is the baseline document for environmental testing for thermal, vibroacoustics, and EMC.

E. Definitions -

1. Pre-Phase-A Study -
   The study provides initial concepts for how the mission requirements could be accommodated (feasibility).

2. Phase-A Study -
   The study provides more detailed and refined concepts that result in a baseline mission definition.

F. Description of process implementation from the perspective of Code 302 -

1. Evaluate Mission Objectives and S/C concept.

   a. Help identify major considerations, conflicts, trades.
   b. Understand mission to anticipate likely areas of tailoring, and to aid future consultation.

2. Evaluate Mission Environments.

   a. Identify and evaluate environments addressed by GEVS.
   b. Identify other environments, where helpful and possible.
   c. Identify and evaluate compatibilities addressed by GEVS.

Example List #1

Baseline Static Magnetic Field Questions:

- What is the orbit?

- Are there instruments that measure magnetic fields?

- Are there magnetic sensors?
    - Bragg Cell?
    - Hall Effect?

- Are there instruments that are sensitive to magnetic fields?

- Does the S/C spin?

- What is the S/C pointing accuracy?

- Does the ACS subsystem have components that use magnetics?
    - Magnetometers?
    - Torque Coils?
    - Torque Bars?
    - Nutation Dampers?
    - Hysteresis Rods?

- Are there RF magnetic devices?
    - Circulators?
    - Isolators?
    - Other ferrite devices?