

# Memorandum

**Date:** 09/30/02  
**To:** Antenna Design Group, CheapRUs Research Corporation, A Wholly Owned Subsidiary of GiveUsTheMoney, Inc.  
**From:** The pointy-haired Boss  
**RE:** Dual-band GPS Antenna Project  
**Priority:** Initial RFP

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To all Antenna Design Sub-groups,

To satisfy our main (and only) customer, the upper management of CheapRUs Research Corp (CheapCorp) have agreed to design and price a fully functional L1 and L2 Link Global Positioning Satellite (GPS) antenna for our customer. Although we have known about this project for twelve months, since our secretary was on vacation (rumors concerning an “escape” to a special hospital are not to be circulated) and we cannot operate the word processor, we have delayed informing the engineering staff until now. You must deliver a feasible design, cost analysis, and prototype by **10/16/02** and a one-page Letter of Intent by **10/07/02**. The Letter of Intent must give enough details as to our design, so that I sound like I know what is going on when I am playing a round of golf with the company president. **You must write a winning proposal to the customer!**

The antenna must have the following characteristics:

1. Ability to receive L1 and L2 bands (whatever that means)
2. Efficient as possible since the GPS signal is small (next proposal will be to boost that signal with some great new, proprietary technology).
3. Small (make it fit in my palm or smaller so I can show it to management easily).
4. Single SMA connector to the receiver (used by both bands).
5. Delivery cost: Less than \$20/unit.
6. Be innovative!!!

The customer requires the following in your proposal:

1. Complete explanation of the design including appropriate graphics.
2. Rational for material and design choices.
3. Discussion of team-member responsibilities (e.g. project manager, lead designer, computer weenie, etc.)
4. Cost proposal for engineering time and production of 1000 units.
5. Computer simulation data to support your designs.
6. Page limit of 10 pages, single sided, 12 pt font.
7. Five (5) minute brief on your design.

Needless to say, the performance of your design group on this critical proposal will weigh heavily on future raise and promotion decisions. The technical point-of-contact (TPOC) for this effort is: Dr. Leo Kempel, 517-353-9944, [kempel@egr.msu.edu](mailto:kempel@egr.msu.edu). Since he is management, don't expect much...