Sat. Photo. HW1

5 Feb 2016 due 1 week: Friday 12 Feb 2016

Implement a matlab function with calling sequence:

XYZ = fi2g (im, l, s, h, dp)

im: image number (don't use for now)
l: line number
s: sample number
h: height (m)
dp: vector of perturbations for attitude (don't use for now)

Call it from a "main" program where read in / assign support data as "global" variables:

```
global ephdata attdata
global eph_start_time, first_line_time avg_line_rate dtl dte
global x0 y0 z0 det_pitch
```

(main) read support data / hardwire support constants into global variables
assign l, s, h for point P02
call fi2g
(fi2g) construct $V_{cam} = \begin{bmatrix} x_0 \\ y_0 - s \times det\_pitch \\ z_0 \end{bmatrix}$

$t_l = first\_line\_time + l \times dtl$
interpolate $X_s Y_s Z_s$ Xdot, Ydot, Zdot
interpolate q_i, q_j, q_k, q_s
unitize
compute rotation matrix M
$Vecf = M \times V_{cam}$

correct for atmos. refr.

Vecf_cor1

correct for velocity aberration

Vecf_cor2

— defer for now

iterative solve for XYZ : $\phi\lambda h_2$ by adjusting h_1 until

h_2 = given h

return X,Y,Z

Convert to enu @ GCP reference

print out $\begin{bmatrix} e \\ n \end{bmatrix} = \begin{bmatrix} \Delta e \\ \Delta n \end{bmatrix} = ?$ (misclosure)