**3D-UTE-GRASP Compilation and Installation on PV360**

1. Following PV360 maunal **Section 3.2.1.3** (screen capture see below) to make a copy of **UTE3D** sequence, and make a new sequence named **graspUTE3D**



1. Following PV360 manual **Section 3.2.1.5** (screen capture see below) to build and install **graspUTE3D**



1. Revise **parsRelations.c**

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Use a text editor open **parsRelations.c**

Finding the following line

**ProUndersampling = MAX\_OF(MIN\_OF(10.0,ProUndersampling),1.0);**

and revise to

**ProUndersampling = MAX\_OF(MIN\_OF(10.0,ProUndersampling),0.1);**

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1. Revise **backbone.c**

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Use a text editor open **backbone.c**, and comment out the **int SetProj3D** function using **/\*** **\*/**

Copy the following new **int SetProj3D** function below to the corresponding place.

**/\* calculate radial projections \*/**

**int SetProj3D( double \*r,**

**double \*p,**

**double \*s,**

**const double gr,**

**const double gp,**

**const double gs)**

**{**

**int j;**

**double pi,angle;**

**double A, B, az, temp, pz, pr, sgn;**

**A=0.682327803828019;**

**B=0.465571231876768;**

**pi=M\_PI;**

**angle = 2.0 \* pi;**

**sgn = 1.0;**

**for(j=0; j<NPro\*PVM\_NRepetitions; j++)**

**{**

**az=angle\*j\*A;**

**temp=floor(j\*B);**

**pz=(j\*B-temp);**

**pr=sqrt(1-pz\*pz);**

**r[j]=pr\*cos(az)\*gr;**

**p[j]=pr\*sin(az)\*gp;**

**s[j]=sgn\*pz\*gs;**

**sgn \*= -1.0; // alternating hemisphere**

**}**

**return 0;**

**}**

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1. Revise **backbone.c**

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Use a text editor open **backbone.c**, and find the following lines

**……**

**if ((ProUndersampling < 1.0) || (ProUndersampling > 10.0))**

**{**

**ProUndersampling=MAX\_OF(MIN\_OF(ProUndersampling,10.0),1.0);**

**UT\_ReportError("Reco memory optimisation failed! Try smaller matrix size.");**

**}**

**……**

Revise to

**……**

**if ((ProUndersampling < 0.1) || (ProUndersampling > 10.0))**

**{**

**ProUndersampling=MAX\_OF(MIN\_OF(ProUndersampling,10.0),0.1);**

**UT\_ReportError("Reco memory optimisation failed! Try smaller matrix size.");**

**}**

**……**

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1. Save all the edited files and go back to step 2, to build and install the revised graspUTE3D sequence.
2. If the build and install in step 6 success, now we can try to run a test scan.
3. To run the test scan, Following PV360 manual **Section 1.9.29.4**, we need to uncheck **Minimize Undersampling** in the Routine Card **(**screen capture see below) to make the **Polar Undersampling** editable, this will change the spokes and scan time.

