ACR Automation Main Script

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It is highly recommended to run the script one section at a time using Ctrl+Enter. All scripts are currently configured to run with both single-frame and multi-frame data.

This suite of scripts require the following toolboxes:

Image Processing Toolbox Signal Processing Toolbox

Data Sorting

Upon running this script, you will be prompted to open data from a folder containing your sagittal localiser. Then you will be asked to provide either one or two axial series. Select 'Two' if you would like to perform the NEMA subtraction method for calculating SNR.

```
clearvars
[img_loc,img_ACR,obj_loc,obj_ACR] = ACR_DataSort;

Error using dir
Name must be a text scalar.

Error in genpath (line 38)
files = dir(d);

Error in ACR_DataSort (line 14)
addpath(genpath(dir_loc)); % Add to path

Error in ACR_Main (line 18)
[img_loc,img_ACR,obj_loc,obj_ACR] = ACR_DataSort;

Error in evalmxdom>instrumentAndRun (line 114)
text = evalc(evalstr);

Error in evalmxdom (line 21)
[data,text,laste] =
 instrumentAndRun(file,cellBoundaries,imageDir,imagePrefix,options);

Error in publish
```

```
Error in ACR_Report (line 3)
publish('ACR_Main.m','pdf')

Error in ACR_Main (line 50)
ACR_Report
```

Geometric Accuracy

```
L = ACR_GeometricAccuracy(img_loc,img_ACR,obj_loc,obj_ACR)
```

High-Contrast Spatial Resolution

DO IT MANUALLY

Slice Thickness Accuracy

```
dz = ACR_SliceThickness(img_ACR,obj_ACR)
```

Slice Position Accuracy

```
dL = ACR_SlicePosition(img_ACR,obj_ACR) % slice 1 and 11
```

Image Intensity Uniformity

```
PIU = ACR_Uniformity(img_ACR,obj_ACR)
```

Percent-Signal Ghosting

```
PSG = ACR_Ghosting(img_ACR,obj_ACR)
```

Low-Contrast Object Detectability

DO IT MANUALLY

SNR

```
SNR = ACR_SNR(img_ACR,obj_ACR)
```

SNR NEMA Subtraction

```
if size(img_ACR,4) > 1
    sub_SNR = ACR_subSNR(img_ACR,obj_ACR)
end
```

Report

```
ACR_Report
```

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