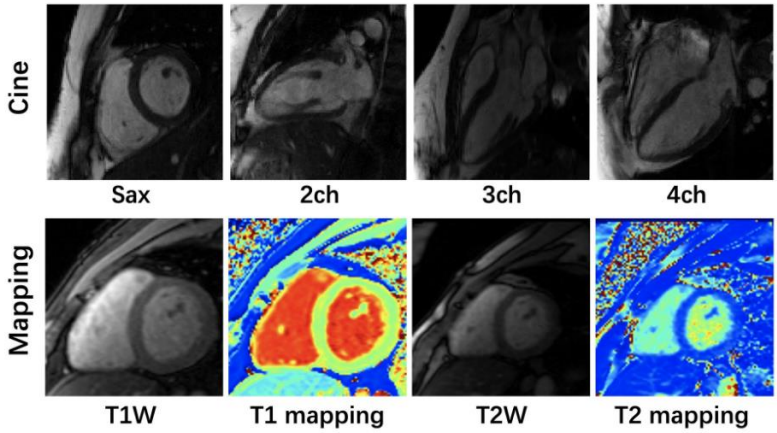
Data Description & Access

Scanner: Siemens 3T MRI scanner (MAGNETOM Vida).

Image acquisition: We followed the recommendations of CMR imaging reported in the previous publication (doi: 10.1007/s43657-02100018-x, 10.1007/s43657-021-00018-x[w.c.y.1].

1. Cine: The 'TrueFISP' readout was used for CINE acquisition. The collected images include short-axis (SA), two-chamber (2CH), three-chamber (3CH) and four-chamber(4CH) long-axis (LA) views. Typically 5~10 slices were acquired for SA cine, while a single slice was acquired for the other views. The cardiac cycle was segmented into 12~25 phases with a temporal resolution 50 ms. For this challenge, we provided raw k-space data of both SA (multi-slices) and LA (multi-views).

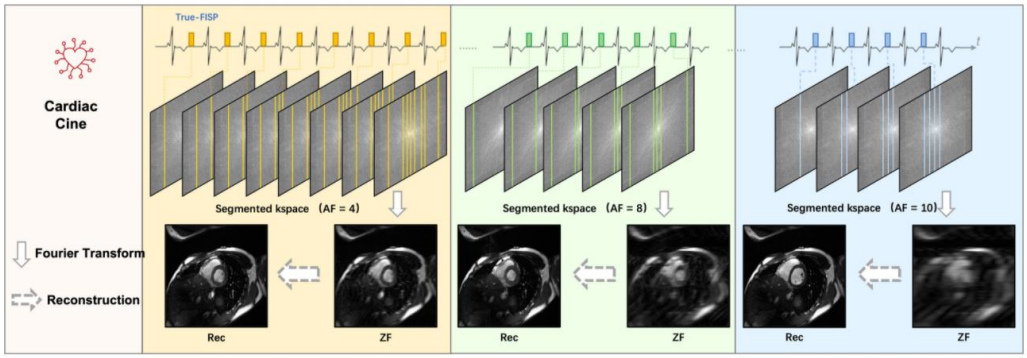
2. Mapping: T1 mapping was conducted using a modified look-locker inversion recovery (MOLLI) sequence, which acquired nine images with different T1 weightings (using the 4-(1)-3-(1)-2 scheme). T1 mapping was performed in SA view only. Signals were collected at the end of the diastole with ECG triggering. T2 mapping was performed using T2-prepared (T2prep)-FLASH sequence with three T2 weightings in SA view, with identical geometrical parameters as used in T1 mapping.



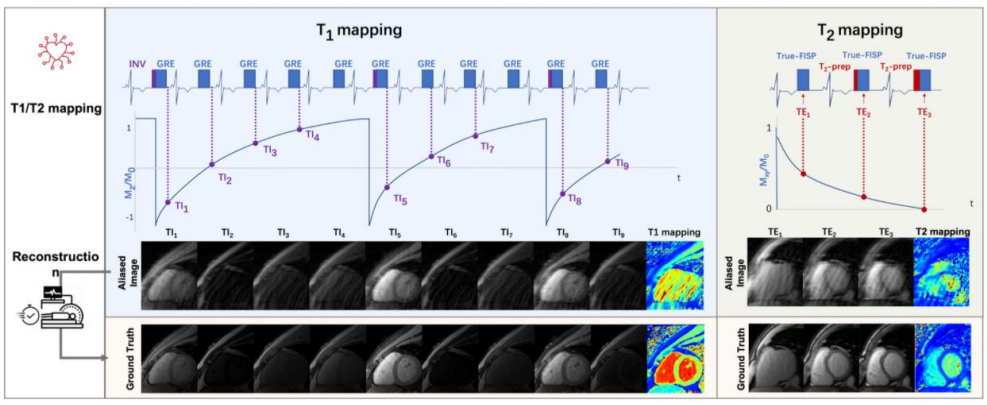
Tasks

The 'CMRxRecon' challenge includes two independent tasks. Each team can choose to participate in one of them or both:

- Task1: **Accelerated cine reconstruction**
  The aim of task 1 is to accelerate cine imaging by raw data under-sampling and address the image degradation due to motions caused by voluntary breath-holds or cardiac arrhythmia. The final goal will be real-time cine imaging.



- Task2: **Accelerated T1/T2 Mapping**



Timeline

The schedule of the challenge is as follows. All deadlines are Pacific Standard Time (PST +0:00).

01 - May	website opens for registration
10 - May	**release training and validation data**
20 - May	release demo code for PI reconstruction
30 - May	submission system opens for validation
15 - Jul	submission system opens for test set
01 - Aug	deadline for STACOM placeholder paper submission
05 - Sep	registration and docker submission deadline
12 - Oct	release final results