

# CENTER-TBI Neuroimaging

- Clinical setting vs research setting in TRACK-TBI
- Data: 3D T2, 3D T1, 3D FLAIR, SWI, DTI, fMRI
- Progress
  - Protocol implemented on Siemens, Philips and GE 3T
  - Assistance from vendors (clinical scientist, application specialist, free scantime)
  - Good communication with TRACK-TBI





# Communication

- 35 centers in 22 countries
- Getting the right information (e.g. scanner serial nr) takes effort
- Use local application specialists for problem solving

## Data upload & QC

- Secure data upload tool finished
- QC pipeline implemented by icoMetrix
- 9 healthy volunteers/site + phantom scans



icoMetrix  
Quantifying your Images

**1 IMAGE SERIES INFORMATION**

HOSPITAL	PATIENT ID	MODALITY	EXAM DATE	SCANNER
UZA, Antwerp, Belgium	UZA_cent_001	MR	12/11/2013 11:24 am	SIEMENS MAGNETOM TrioTim MR B17

**2 DICOM PARAMETER VERIFICATION**

Sequence	TR	TE	FoV	# slices	voxel size	Acquisition time	Sequence specific parameters	status
FLAIR 3D	6000	394	256	160	1 x 1 x 1	7:02	TI: 900	✓
SWI	29	20	256	72	0.5 x 1 x 2	4:35		✓
DTI	9800	91	256	75	2 x 2 x 2	5:35	# dir.: 30 b: 0 / 1000	✓
T2w 3D	2500	361	256	176	1 x 1 x 1	4:02		✓
T1w 3D	2300	2.93	270	192	1.1 x 1.1 x 1.2	5:12	TI: 2200	✓
rs-fMRI	1500	27	288	35	3 x 3 x 3	7:35	EPI: 96	✗

Remarks:  
Sequence rs-fMRI: TR should be 2500 ms

**3 SIGNAL TO NOISE RATIO**

FLAIR 3D	52	✓
T2w 3D	78	✓
T1w 3D	112	✓

**4 MOTION DETECTION**

	translation	rotation	
DTI	0.6 mm	1.7°	✓
rs-fMRI	0.8 mm	2.1°	✓