

GENEVE, SUISSE:

**From :**  
BERNI S.  
GAYDE J.C.  
JOUX J.N.

PH/LBO  
TS/SU  
TS/SU

<b>To:</b>	BATTISTA LOPES J.	PH/LBD
	BACHMANN S.	PH/ULB
	CHADAJ B.	PH/TA3
	JAMET O.	PH/LBD
	LINDNER R.	PH/LBD
	PELLEGRINO A.	PH/ULB
	SCHUIJLENBURG H.	PH/ULB
	SYRYCZYNSKI K.	PH/ULB
	TRAN M-T	PH/ULB
	WITZELING W.	PH/LBO

**LHC-b - UX85  
OUTER TRACKER - CRYO SIDE  
ADJUSTMENT OF C FRAMES A2 B2 C2  
FOR RASNIK INSTALLATION**

**November 21<sup>rd</sup> - 22nd, 2006**

The EDMS document, **id: 802526** containing this report can be found at the address:

<https://edms.cern.ch/document/802526>

## 1 Introduction:

The C frames were adjusted using the corners of the frame itself in order to allow the RASNIK System installation.

## 2 LHC-b Survey Co-ordinate System

- Origin: Interaction Point IP;
- $Z_{SU}$  axis: **vertical**, positive to the top;
- $X_{SU}$  axis: beam projection in the **horizontal** plane, positive from cavern to IP;
- $Y_{SU}$  axis: **horizontal**, perpendicular to the XZ plane, positive to the LHC centre

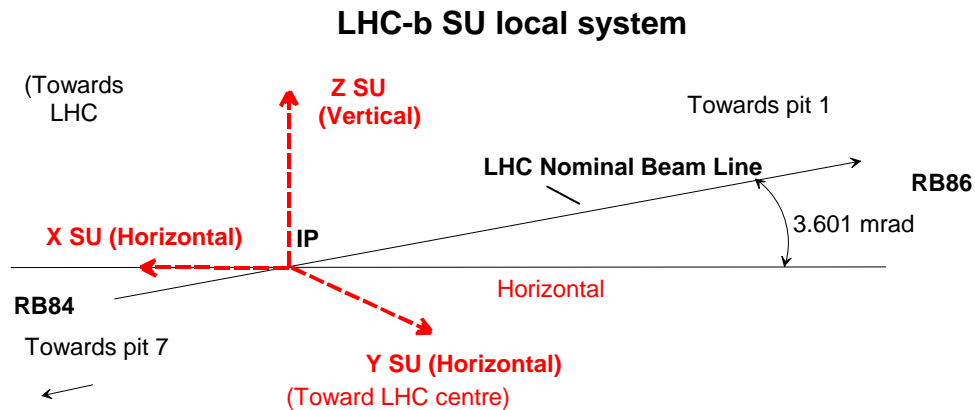


Figure 1 : LHCb Co-ordinate systems

### 3 C frame point positions and names:

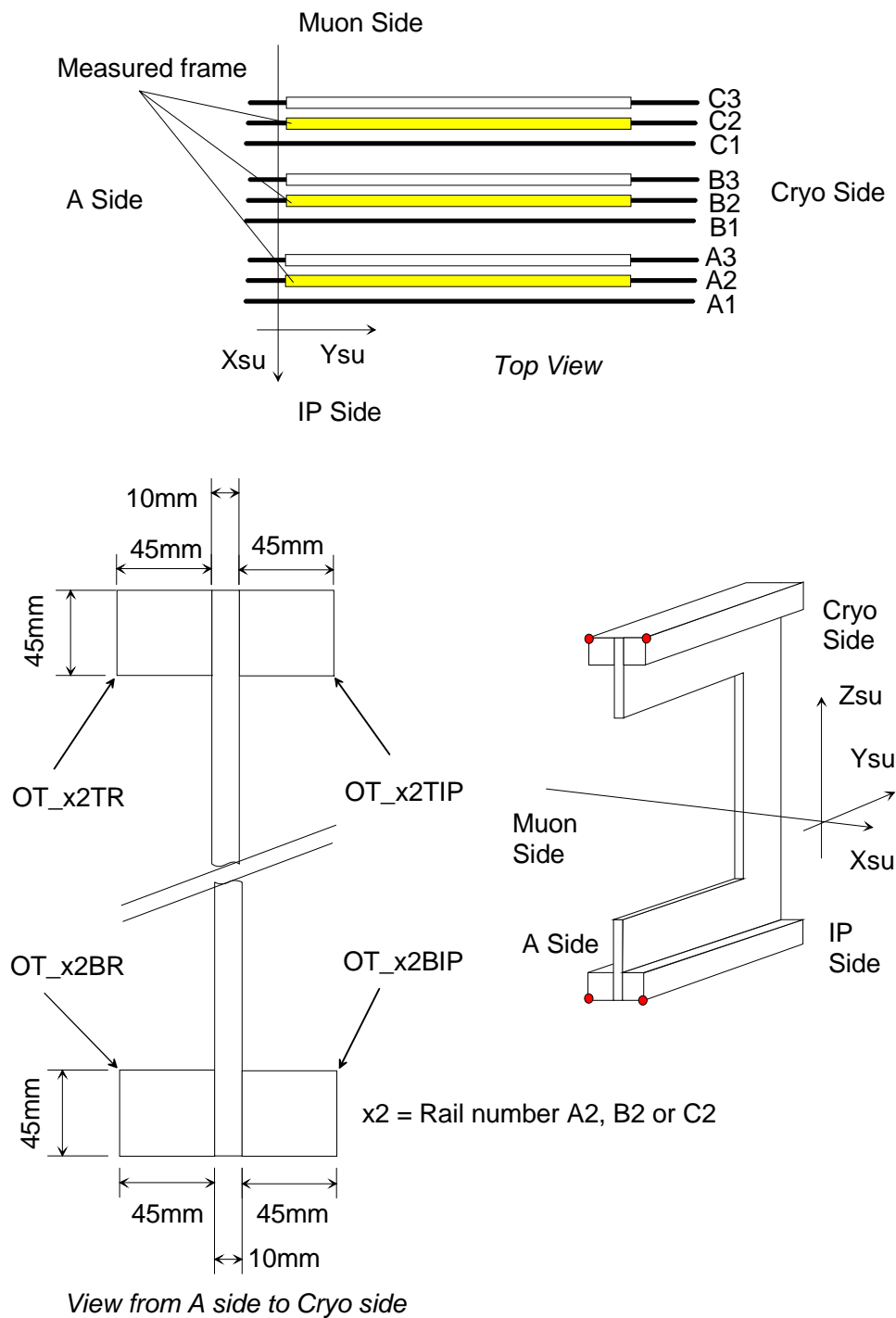


Figure 2 : Point positions and names

#### 4 Coordinates of the points:

The coordinates are given in the LHCb Survey Coordinate System, see §2.

The coordinates were corrected according to the frame dimensions values given by Sebastian Bachmann and are given **at the corner of the frames** as indicated on the figures above.

Precision of the coordinates along X, Y and Z axis is 0.5 mm at 1 sigma level.

AFTER ADJUSTMENT - 22 Nov 2006									
	Measured			Nominal (From Sebastian Bachmann)			Measured - Nominal		
	XSU(m)	YSU(m)	ZSU(m)	XSU(m)	YSU(m)	ZSU(m)	DX(mm)	DY(mm)	DZ(mm)
OT-A2BIP	-7.8370	0.0833	-2.9972	-7.8380	0.0833	-2.9966	1.0	0.0	-0.6
OT-A2BR	-7.9368	0.0832	-2.9977	-7.9380	0.0833	-2.9966	1.2	-0.1	-1.1
OT-A2TIP	-7.8379	0.0822	3.0535	-7.8380	0.0833	3.0534	0.1	-1.1	0.1
OT-A2TR	-7.9375	0.0824	3.0539	-7.9380	0.0833	3.0534	0.5	-0.9	0.5
OT-B2BIP	-8.5197	0.0833	-2.9962	-8.5200	0.0833	-2.9941	0.3	0.0	-2.1
OT-B2BR	-8.6197	0.0835	-2.9962	-8.6200	0.0833	-2.9941	0.3	0.2	-2.1
OT-B2TIP	-8.5213	0.0848	3.0557	-8.5200	0.0833	3.0559	-1.3	1.5	-0.2
OT-B2TR	-8.6208	0.0848	3.0558	-8.6200	0.0833	3.0559	-0.8	1.5	-0.1
OT-C2BIP	-9.2031	0.0864	-2.9952	-9.2050	0.0833	-2.9917	1.9	3.1	-3.5
OT-C2BR	-9.3033	0.0863	-2.9944	-9.3050	0.0833	-2.9917	1.7	3.0	-2.7
OT-C2TIP	-9.2044	0.0830	3.0568	-9.2050	0.0833	3.0583	0.6	-0.3	-1.5

The point OT-C2R was not measured; it was not possible to put the target there.