

## 3C Results

11/03/2011

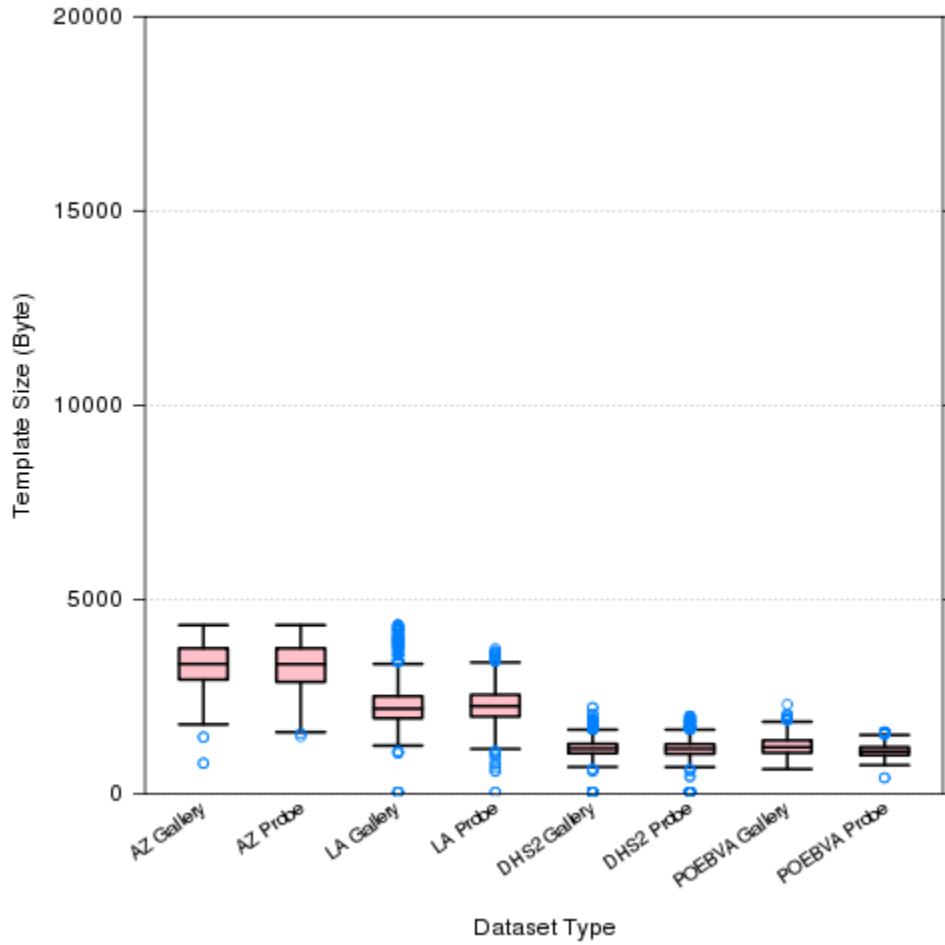
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\* Note:

Finger	01	02	03	06	07	08	01+06	02+07	03+08
Description	Right Thumb	Right Index	Right Middle	Left Thumb	Left Index	Left Middle	Right and Left Thumb	Right and Left Index	Right and Left Middle

### 3C 1K Sample Template Size Distribution

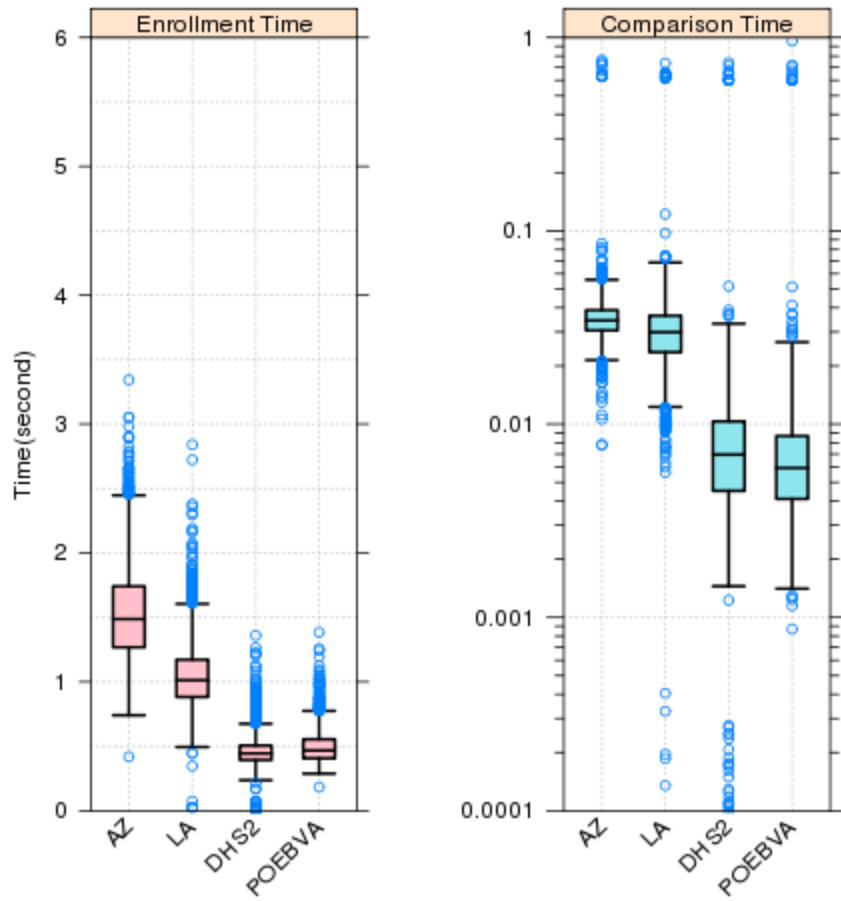


**Figure 3C-1**

Dataset	AZ	AZ	LA	LA	DHS2	DHS2	POEBVA	POEBVA
Type	Gallery	Probe	Gallery	Probe	Gallery	Probe	Gallery	Probe
Width x Height (ppi)	800x800	800x800	412x1000	400x776	368x368	368x368	500x500	368x368
Maximum	4336	4336	4336	3728	2212	1996	2292	1584
75%	3740	3740	2506	2544	1280	1272	1368	1196
Median	3334	3330	2184	2250	1156	1152	1192	1088
25%	2932	2872	1938	1980	1036	1020	1048	988
Minimum	780	1472	32	32	32	32	628	404

**Table 3C-1**

### 3C 1K sample Enrollment and Comparison time



**Figure 3C-2**

**Enrollment Time (second)**

**Comparison Time (second)**

Dataset	AZ	LA	DHS2	POEBVA
Maximum	3.3429	2.8403	1.3596	1.3840
75%	1.7416	1.1718	0.5060	0.5542
Median	1.4869	1.0129	0.4444	0.4673
25%	1.2677	0.8824	0.3930	0.4064
Minimum	0.4188	0.0195	0.0076	0.1833

Dataset	AZ	LA	DHS2	POEBVA
Maximum	0.7627	0.7373	0.7415	0.9595
75%	0.0388	0.0364	0.0103	0.0087
Median	0.0344	0.0299	0.0070	0.0059
25%	0.0305	0.0235	0.0045	0.0041
Minimum	0.0078	0.0000	0.0000	0.0009

**Table 3C-2**

**3C- DET for ALL Datasets (P2P)**

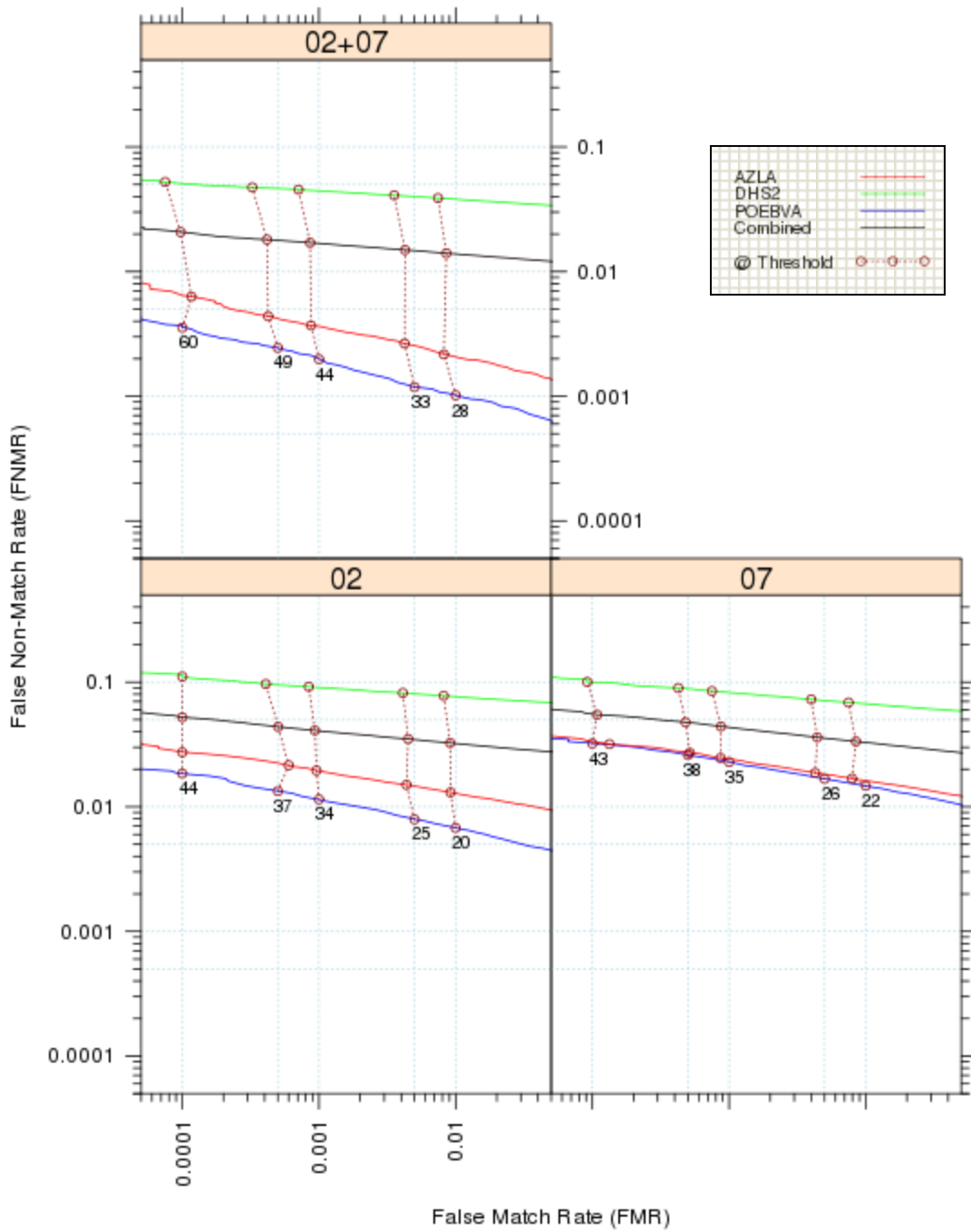
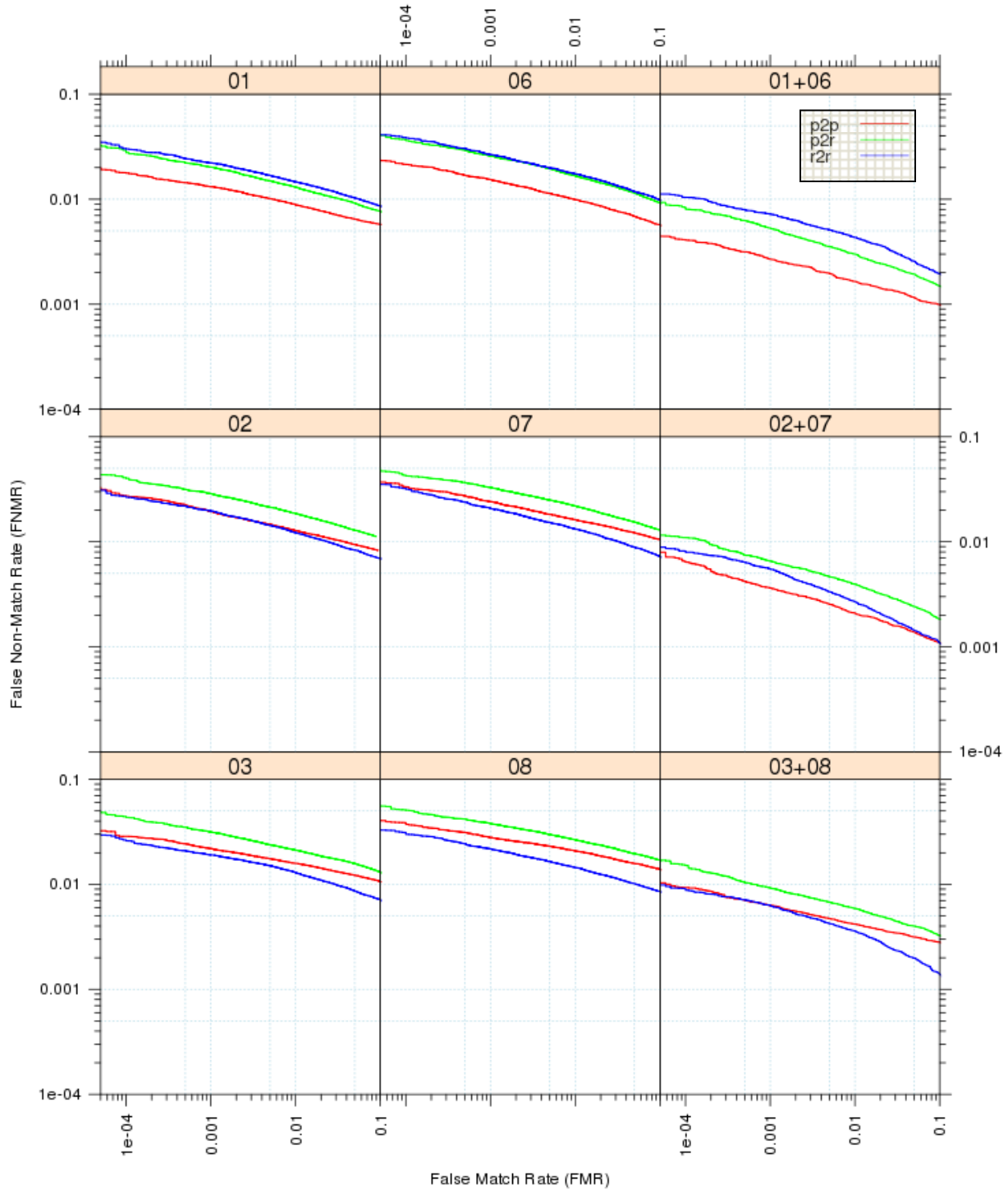


Figure 3C-3

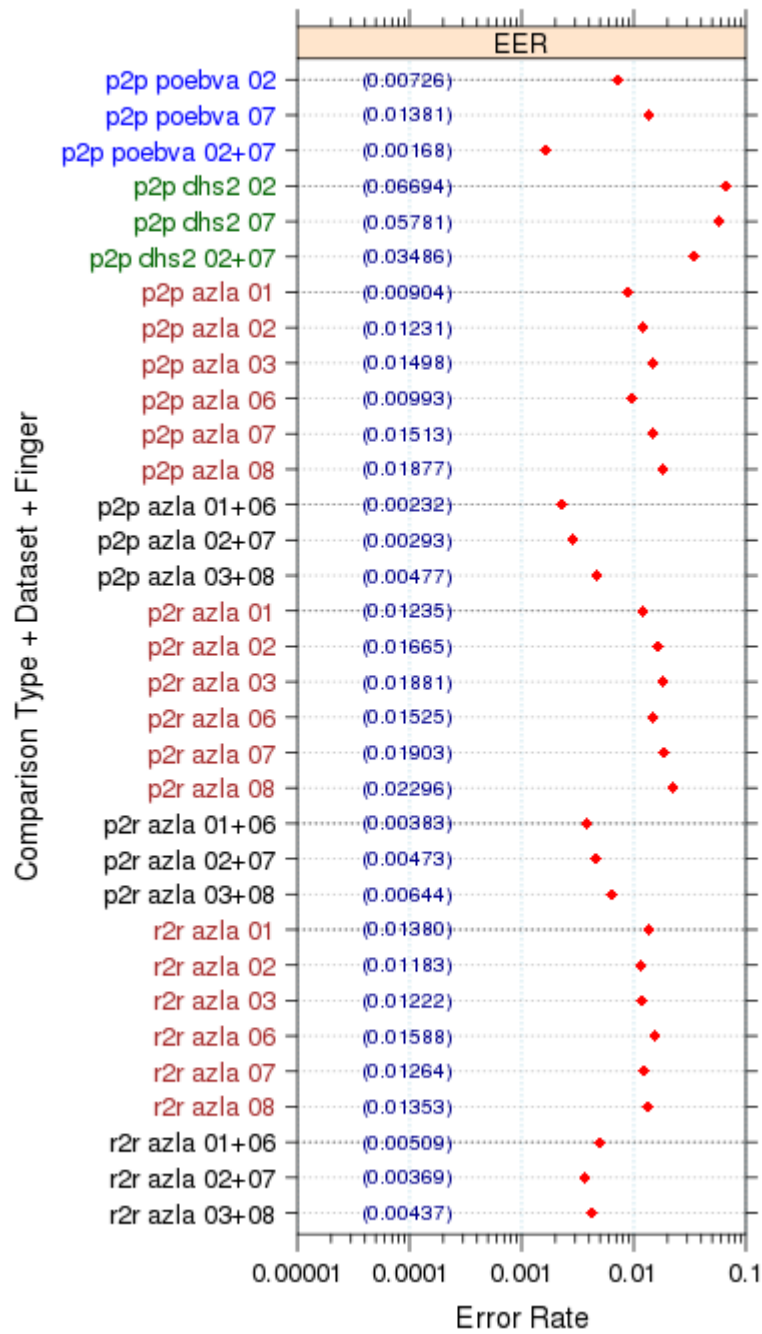
### 3C- DET for dataset AZLA



**Figure 3C-4**

Note: p2p - plain vs. plain; p2r - plain vs. rolled; r2r – rolled vs. rolled.

### 3C EER and FTE



**Figure 3C-5**

Note: EER table is not presented in Figure 5 due to all the EER = 0.

### 3C - FNMRs @ FMR = .0001 and 95% Confidence Intervals

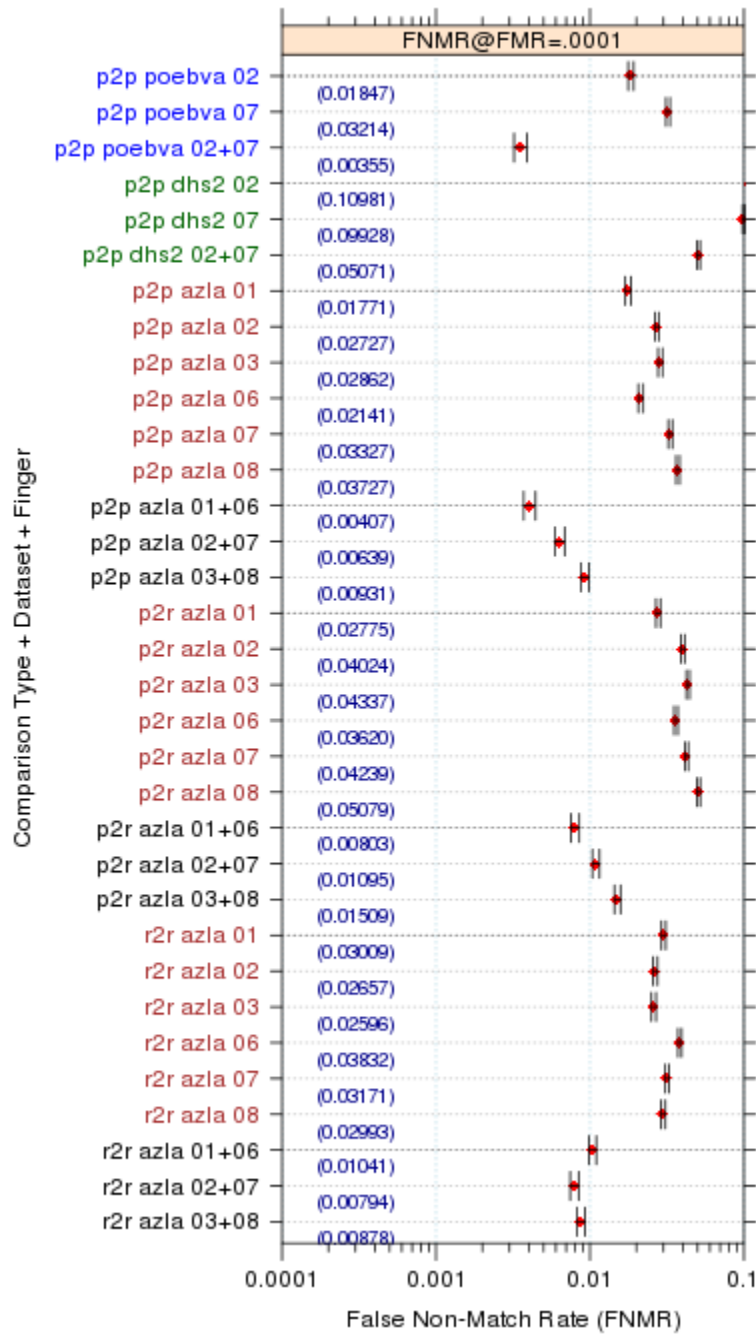


Figure 3C-5

### 3C- FMRs @ FNMR = (.002, 0.005) and 95% Confidence Intervals

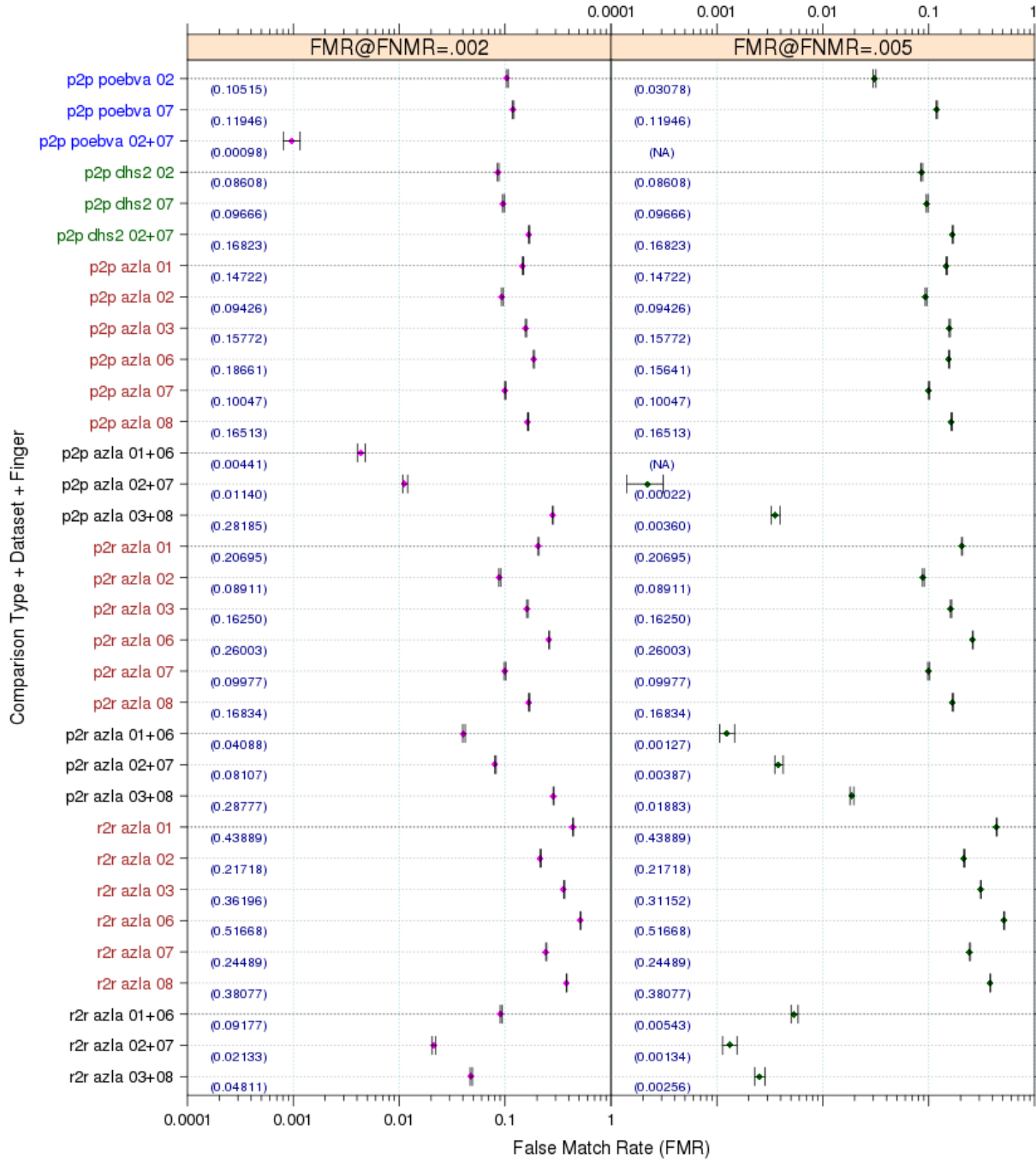


Figure 3C-6

Note: NA – The number couldn't be reliably measured with the current sample size of 120,000.



**3C - EER and FTE table**

Comparison Type	Dataset	Finger Position	EER	FTE Rate	FTE count
p2p	poebva	02	0.0073	0	0
p2p	poebva	07	0.0138	0	0
p2p	poebva	02+07	0.0017	0	0
p2p	dhs2	02	0.0669	0	0
p2p	dhs2	07	0.0578	0	0
p2p	dhs2	02+07	0.0349	0	0
p2p	azla	01	0.0090	0	0
p2p	azla	02	0.0123	0	0
p2p	azla	03	0.0150	0	0
p2p	azla	06	0.0099	0	0
p2p	azla	07	0.0151	0	0
p2p	azla	08	0.0188	0	0
p2p	azla	01+06	0.0023	0	0
p2p	azla	02+07	0.0029	0	0
p2p	azla	03+08	0.0048	0	0
p2r	azla	01	0.0124	0	0
p2r	azla	02	0.0167	0	0
p2r	azla	03	0.0188	0	0
p2r	azla	06	0.0153	0	0
p2r	azla	07	0.0190	0	0
p2r	azla	08	0.0230	0	0
p2r	azla	01+06	0.0038	0	0
p2r	azla	02+07	0.0047	0	0
p2r	azla	03+08	0.0064	0	0
r2r	azla	01	0.0138	0	0
r2r	azla	02	0.0118	0	0
r2r	azla	03	0.0122	0	0
r2r	azla	06	0.0159	0	0
r2r	azla	07	0.0126	0	0
r2r	azla	08	0.0135	0	0
r2r	azla	01+06	0.0051	0	0
r2r	azla	02+07	0.0037	0	0
r2r	azla	03+08	0.0044	0	0

**Table 3C-3**

Note: All the FET count are 0s, Hence FTE = 0

### 3C- FNMR @ FMR=0.0001, FMRs @ FNMR = (.002, 0.005) and 95% Confidence Intervals

Matching Type	Dataset	Finger position	FNMR@ FMR= 0.0001	95% Confidence Interval of FNMR	FMR1 @ FNMR= 0.002	95% Confidence Interval of FMR1	FMR2 @ FNMR= 0.005	95% Confidence Interval of FMR2
p2p	poebva	02	0.0185	±0.00076	0.1052	±0.00174	0.0308	±0.00098
p2p	poebva	07	0.0321	±0.00100	0.1195	±0.00184	0.1195	±0.00184
p2p	poebva	02+07	0.0036	±0.00034	0.0010	±0.00018	NA	NA
p2p	dhs2	02	0.1098	±0.00177	0.0861	±0.00159	0.0861	±0.00159
p2p	dhs2	07	0.0993	±0.00169	0.0967	±0.00167	0.0967	±0.00167
p2p	dhs2	02+07	0.0507	±0.00124	0.1682	±0.00212	0.1682	±0.00212
p2p	azla	01	0.0177	±0.00075	0.1472	±0.00201	0.1472	±0.00201
p2p	azla	02	0.0273	±0.00092	0.0943	±0.00165	0.0943	±0.00165
p2p	azla	03	0.0286	±0.00094	0.1577	±0.00206	0.1577	±0.00206
p2p	azla	06	0.0214	±0.00082	0.1866	±0.00220	0.1564	±0.00206
p2p	azla	07	0.0333	±0.00102	0.1005	±0.00170	0.1005	±0.00170
p2p	azla	08	0.0373	±0.00107	0.1651	±0.00210	0.1651	±0.00210
p2p	azla	01+06	0.0041	±0.00036	0.0044	±0.00038	NA	NA
p2p	azla	02+07	0.0064	±0.00045	0.0114	±0.00060	0.0002	±0.00009
p2p	azla	03+08	0.0093	±0.00054	0.2819	±0.00255	0.0036	±0.00034
p2r	azla	01	0.0278	±0.00093	0.2070	±0.00229	0.2070	±0.00229
p2r	azla	02	0.0402	±0.00111	0.0891	±0.00161	0.0891	±0.00161
p2r	azla	03	0.0434	±0.00115	0.1625	±0.00209	0.1625	±0.00209
p2r	azla	06	0.0362	±0.00106	0.2600	±0.00248	0.2600	±0.00248
p2r	azla	07	0.0424	±0.00114	0.0998	±0.00170	0.0998	±0.00170
p2r	azla	08	0.0508	±0.00124	0.1683	±0.00212	0.1683	±0.00212
p2r	azla	01+06	0.0080	±0.00051	0.0409	±0.00112	0.0013	±0.00020
p2r	azla	02+07	0.0110	±0.00059	0.0811	±0.00154	0.0039	±0.00035
p2r	azla	03+08	0.0151	±0.00069	0.2878	±0.00256	0.0188	±0.00077
r2r	azla	01	0.0301	±0.00097	0.4389	±0.00281	0.4389	±0.00281
r2r	azla	02	0.0266	±0.00091	0.2172	±0.00233	0.2172	±0.00233
r2r	azla	03	0.0260	±0.00090	0.3620	±0.00272	0.3115	±0.00262
r2r	azla	06	0.0383	±0.00109	0.5167	±0.00283	0.5167	±0.00283
r2r	azla	07	0.0317	±0.00099	0.2449	±0.00243	0.2449	±0.00243
r2r	azla	08	0.0299	±0.00096	0.3808	±0.00275	0.3808	±0.00275
r2r	azla	01+06	0.0104	±0.00057	0.0918	±0.00163	0.0054	±0.00042
r2r	azla	02+07	0.0079	±0.00050	0.0213	±0.00082	0.0013	±0.00021
r2r	azla	03+08	0.0088	±0.00053	0.0481	±0.00121	0.0026	±0.00029

**Table 3C-4**

Note: NA – The number couldn't be reliably measured with the current sample size of 120,000.