A: Datasheet

Algorithm: realnetworks_003

Developer: Realnetworks Inc

Submission Date: 2019_06_12

Template size: 1848 bytes

Template time (2.5 percentile): 168 msec

Template time (median): 174 msec

Template time (97.5 percentile): 202 msec

Investigation:

Frontal mugshot ranking 235 (out of 329) –– FNIR(1600000, 0, 1) = 0.0242 vs. lowest 0.0009 from sensetime_006

Mugshot webcam ranking 218 (out of 291) –– FNIR(1600000, 0, 1) = 0.0615 vs. lowest 0.0057 from sensetime_006

Mugshot profile ranking 148 (out of 260) –– FNIR(1600000, 0, 1) = 0.7709 vs. lowest 0.0550 from sensetime_006

Immigration visa–border ranking 147 (out of 218) –– FNIR(1600000, 0, 1) = 0.0313 vs. lowest 0.0009 from sensetime_006

Immigration visa–kiosk ranking 142 (out of 215) –– FNIR(1600000, 0, 1) = 0.2091 vs. lowest 0.0487 from cubox_000

Identification:

Frontal mugshot ranking 221 (out of 329) –– FNIR(1600000, T, L+1) = 0.1589, FPIR=0.001000 vs. lowest 0.0017 from nec_005

Mugshot webcam ranking 208 (out of 289) –– FNIR(1600000, T, L+1) = 0.2658, FPIR=0.001000 vs. lowest 0.0120 from nec_005

Mugshot profile ranking 162 (out of 259) –– FNIR(1600000, T, L+1) = 0.9983, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa–border ranking 141 (out of 217) –– FNIR(1600000, T, L+1) = 0.1641, FPIR=0.001000 vs. lowest 0.0032 from paravision_009

Immigration visa–kiosk ranking 110 (out of 212) –– FNIR(1600000, T, L+1) = 0.5086, FPIR=0.001000 vs. lowest 0.0728 from paravision_009
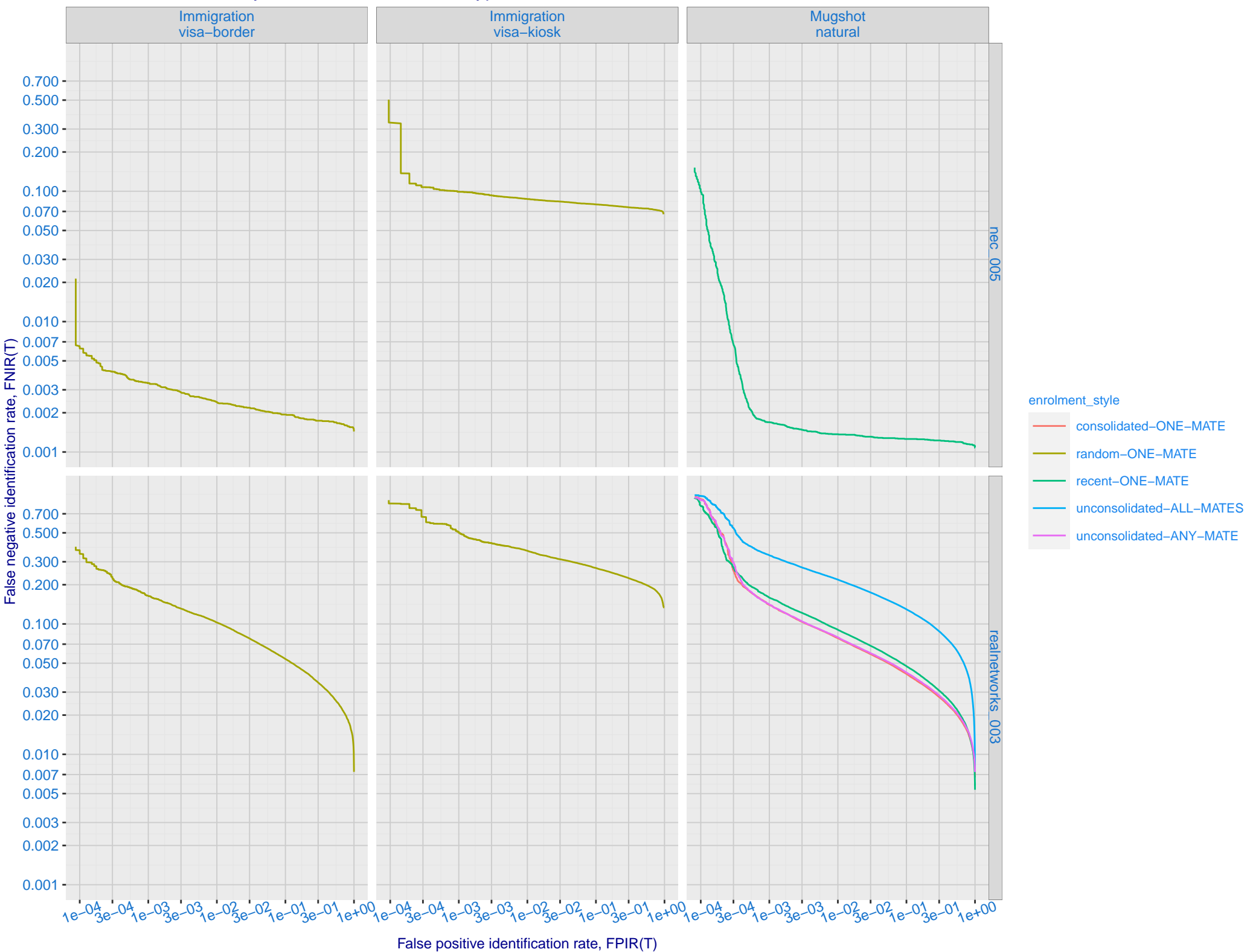
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (nec_005)
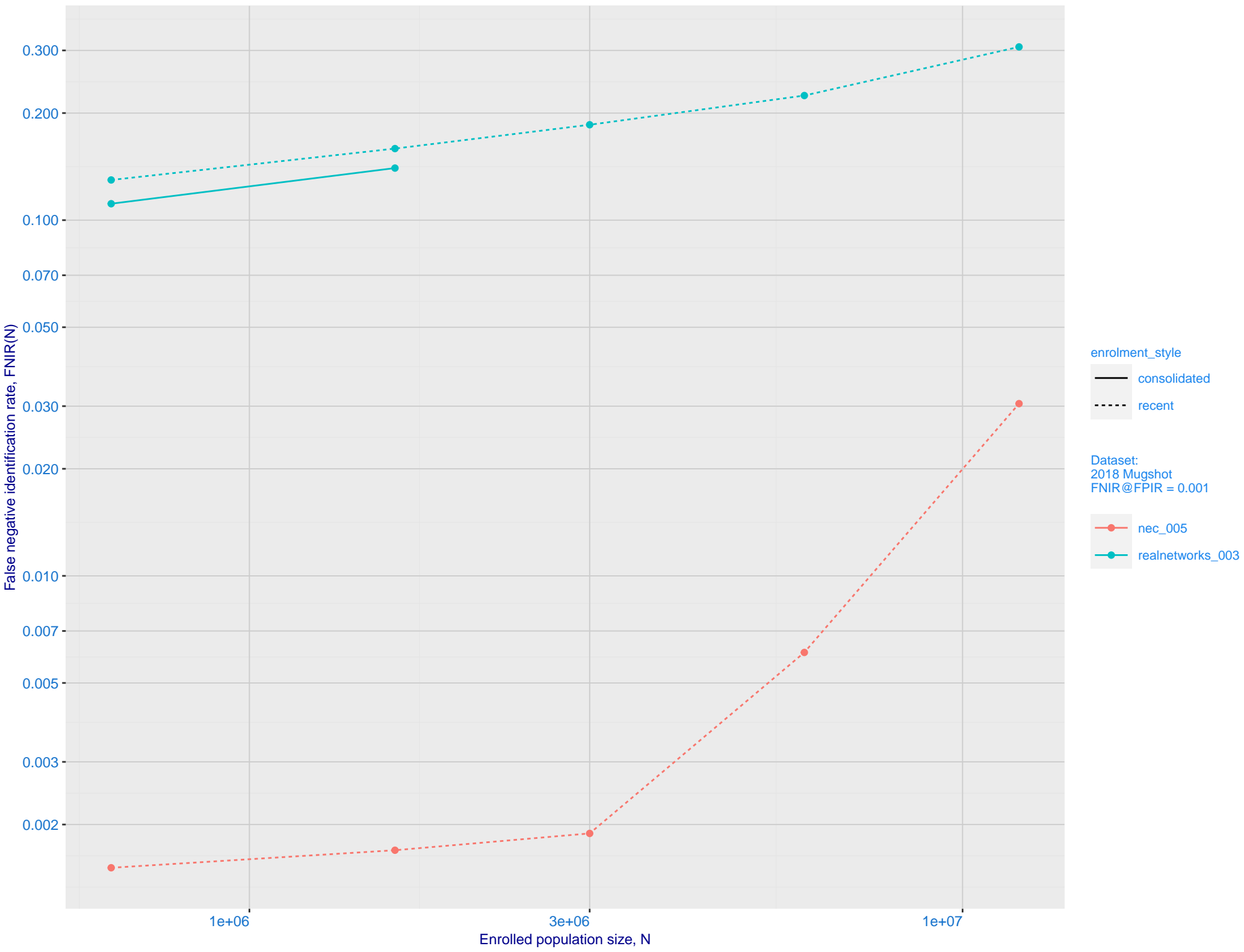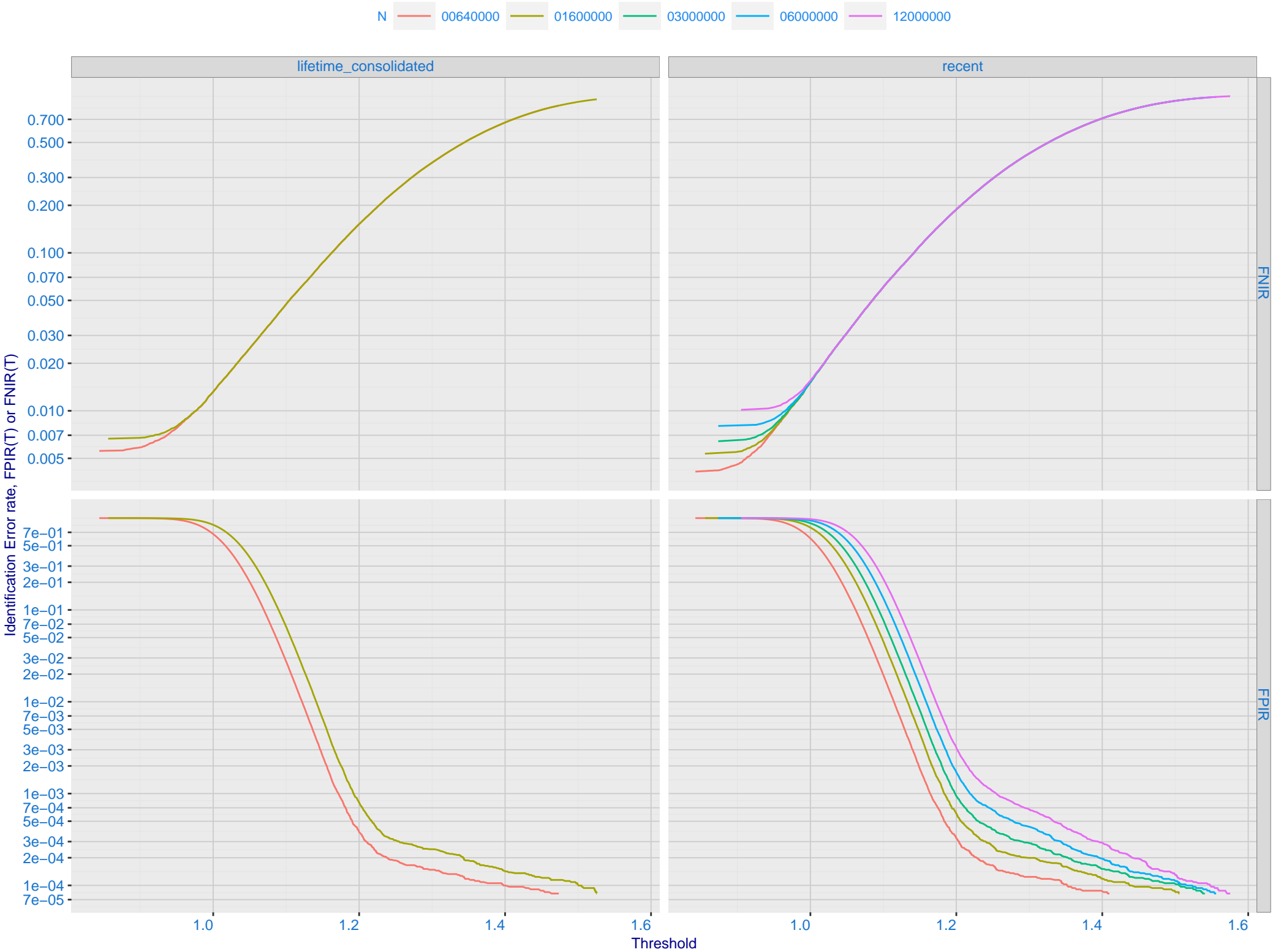
C: Evolution of accuracy for REALNETWORKS algorithms on three datasets 2018 – present
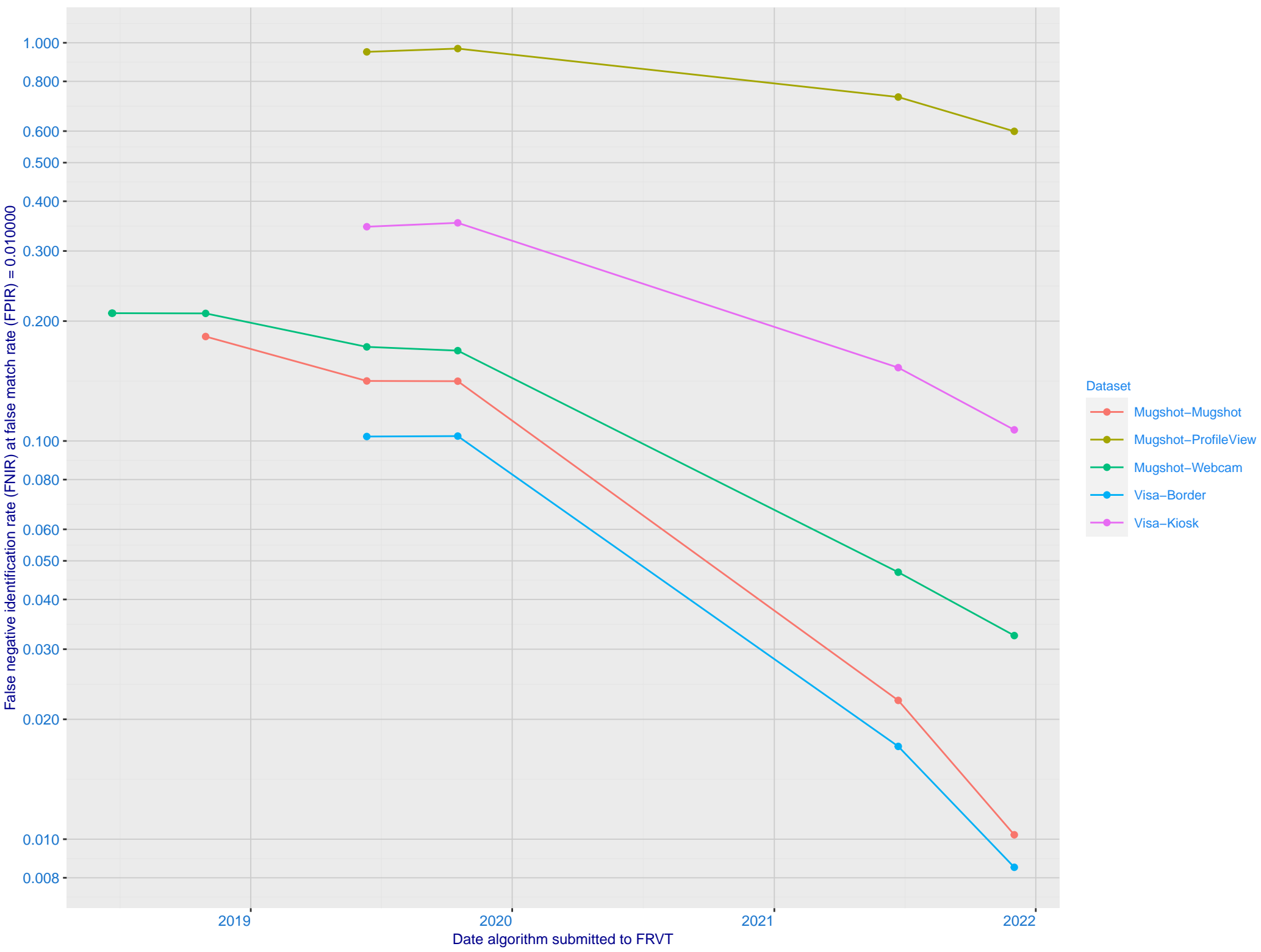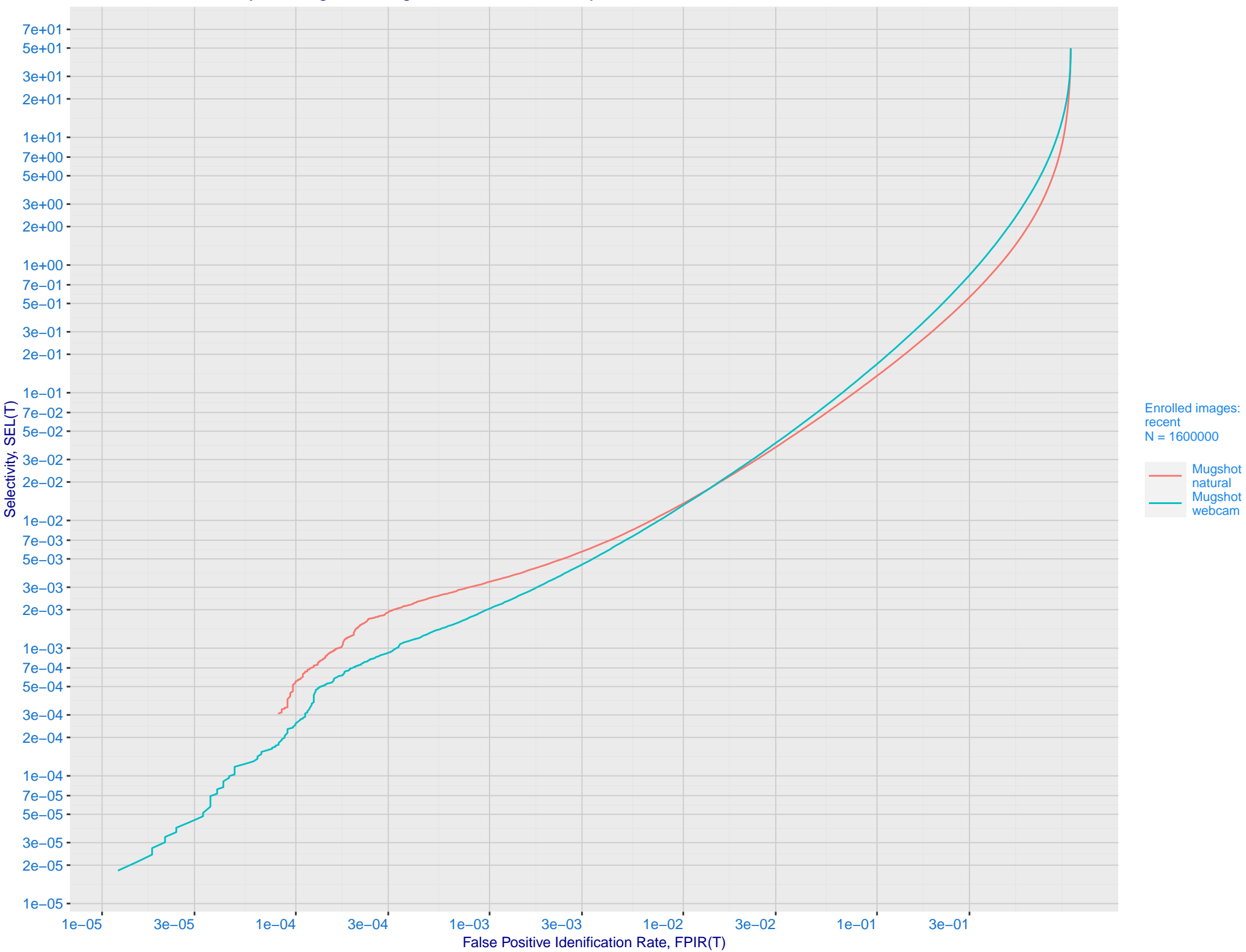
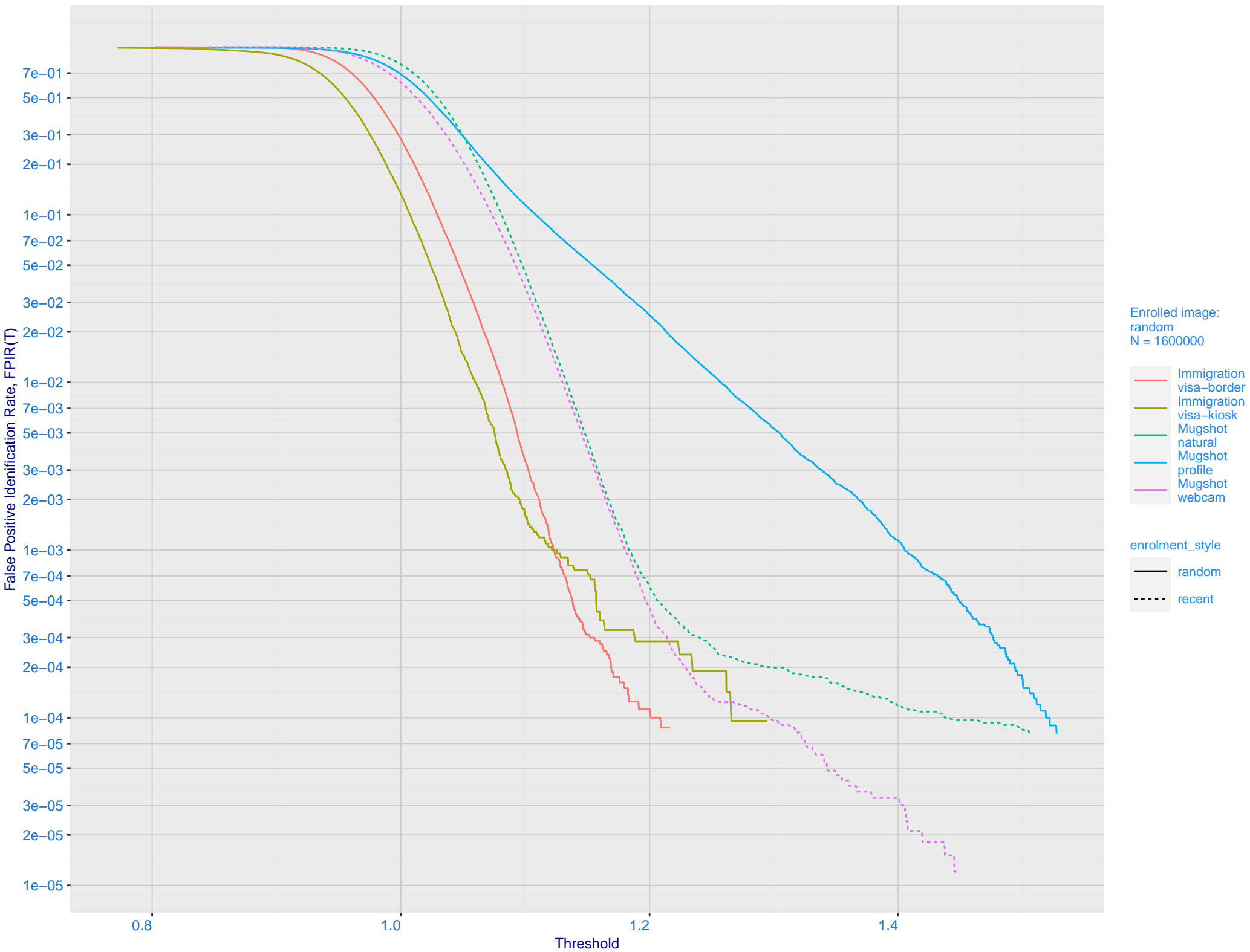D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
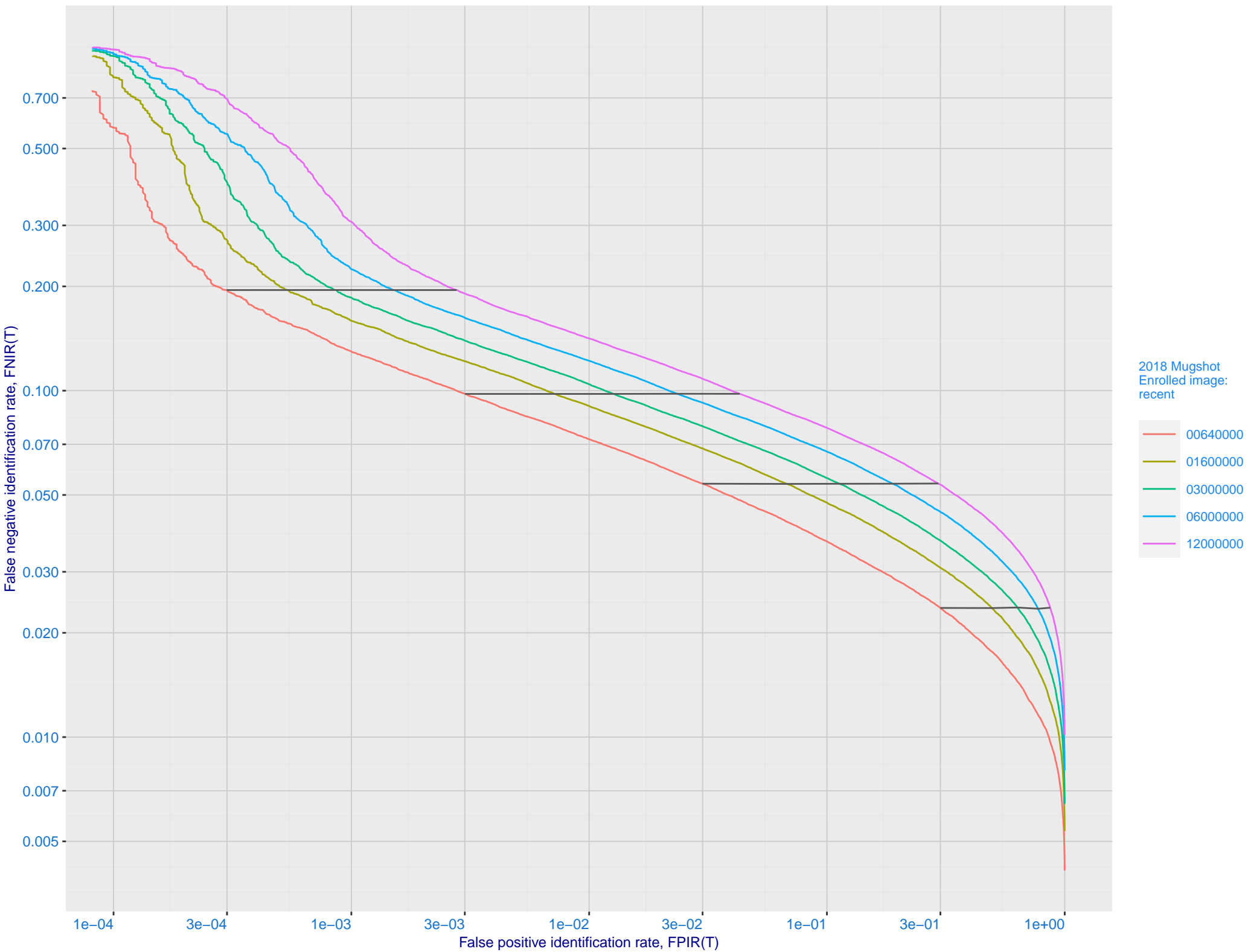
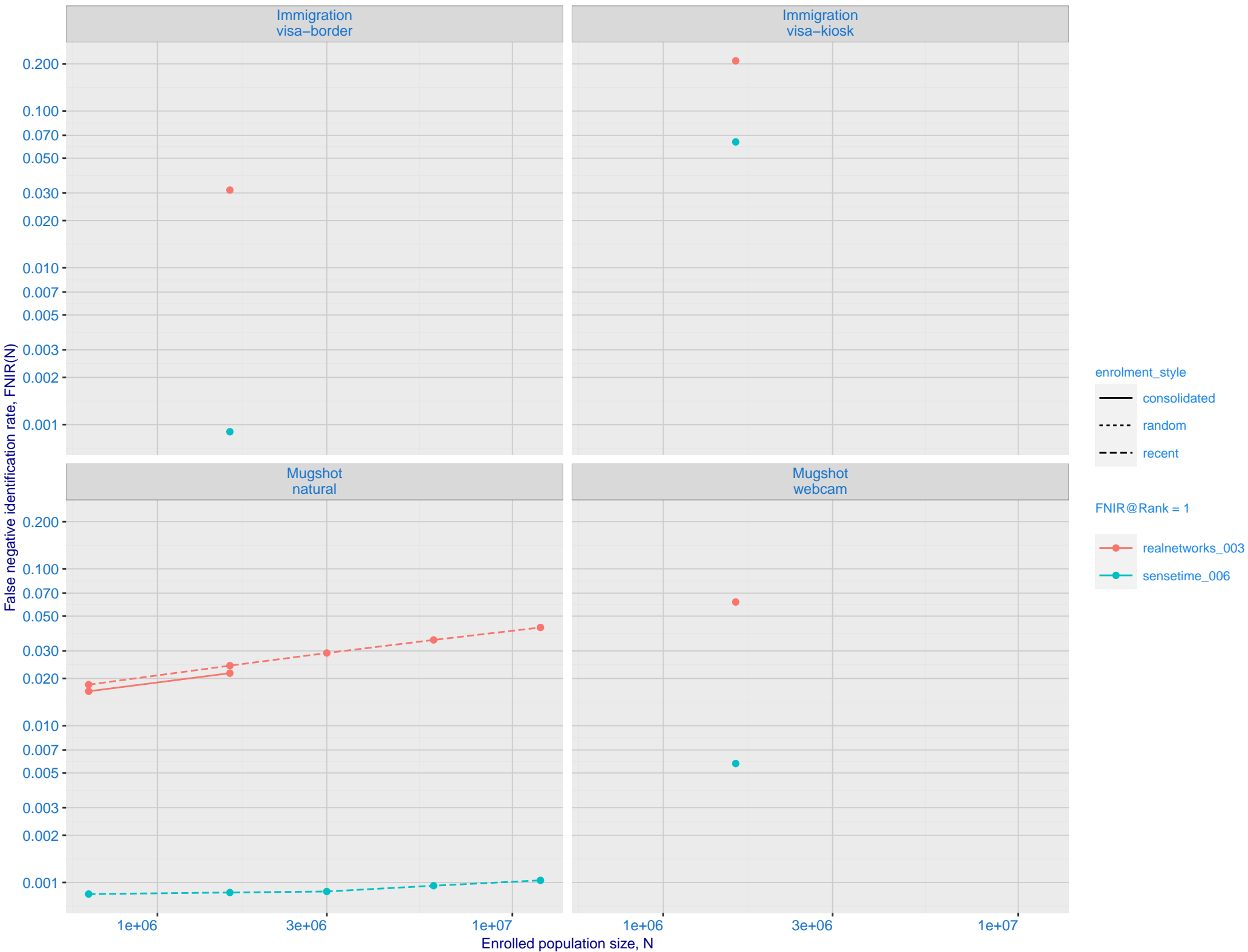F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

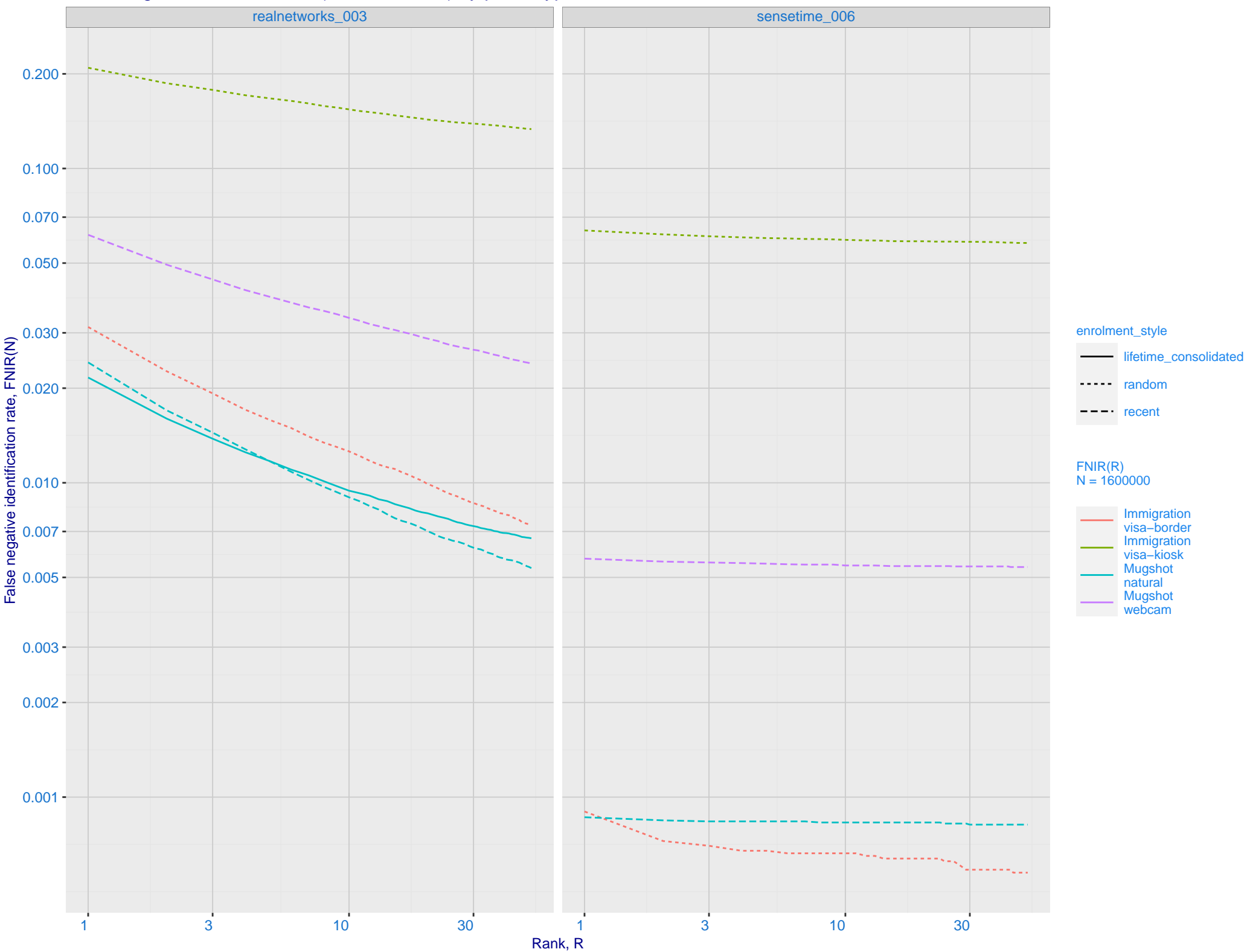G: FPIR dependence on T by probe type for N = 1600000 subjects

J: DET for Mugshot natural images and various N. Links connect points of equal threshold.
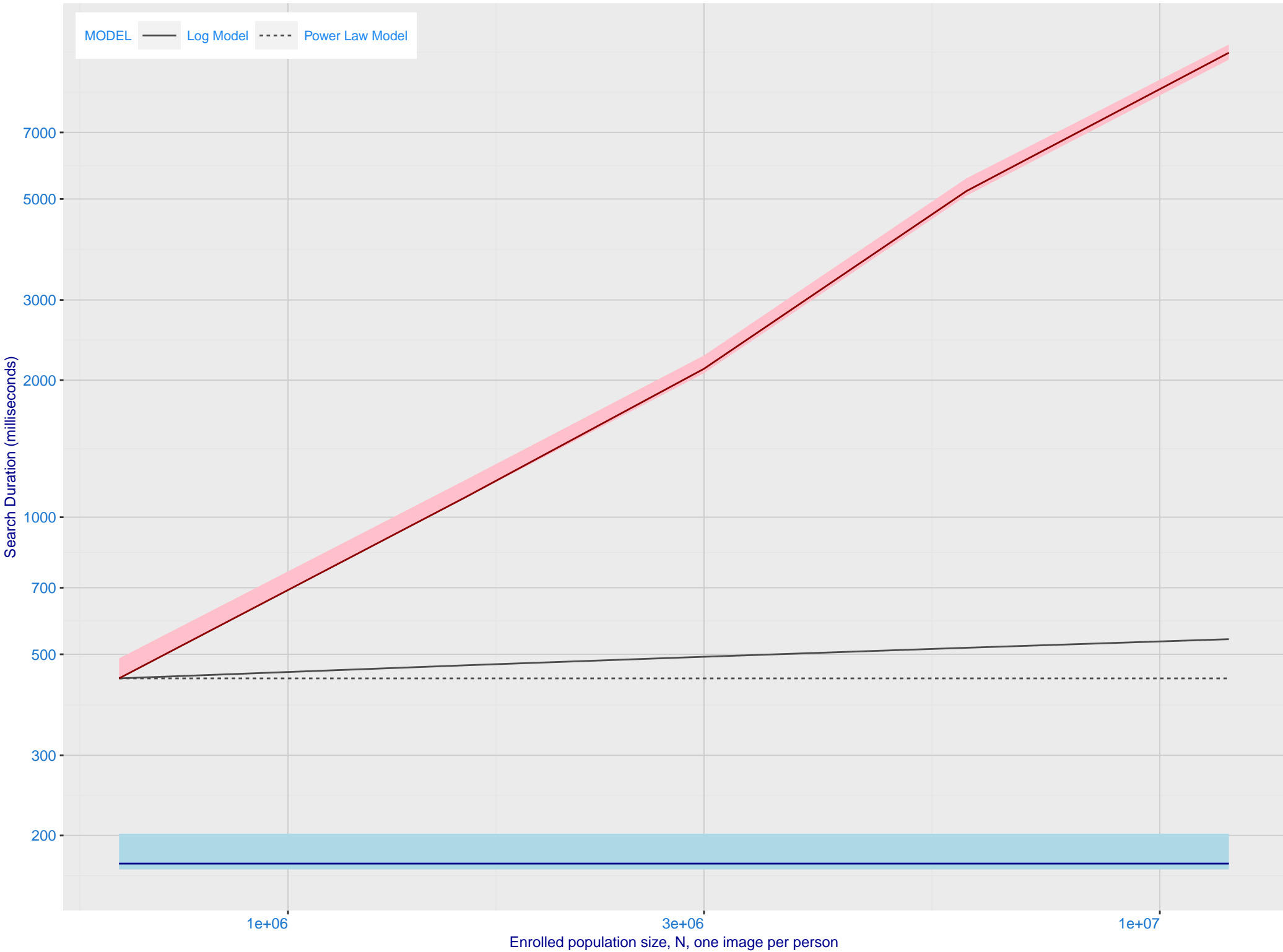
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_006)

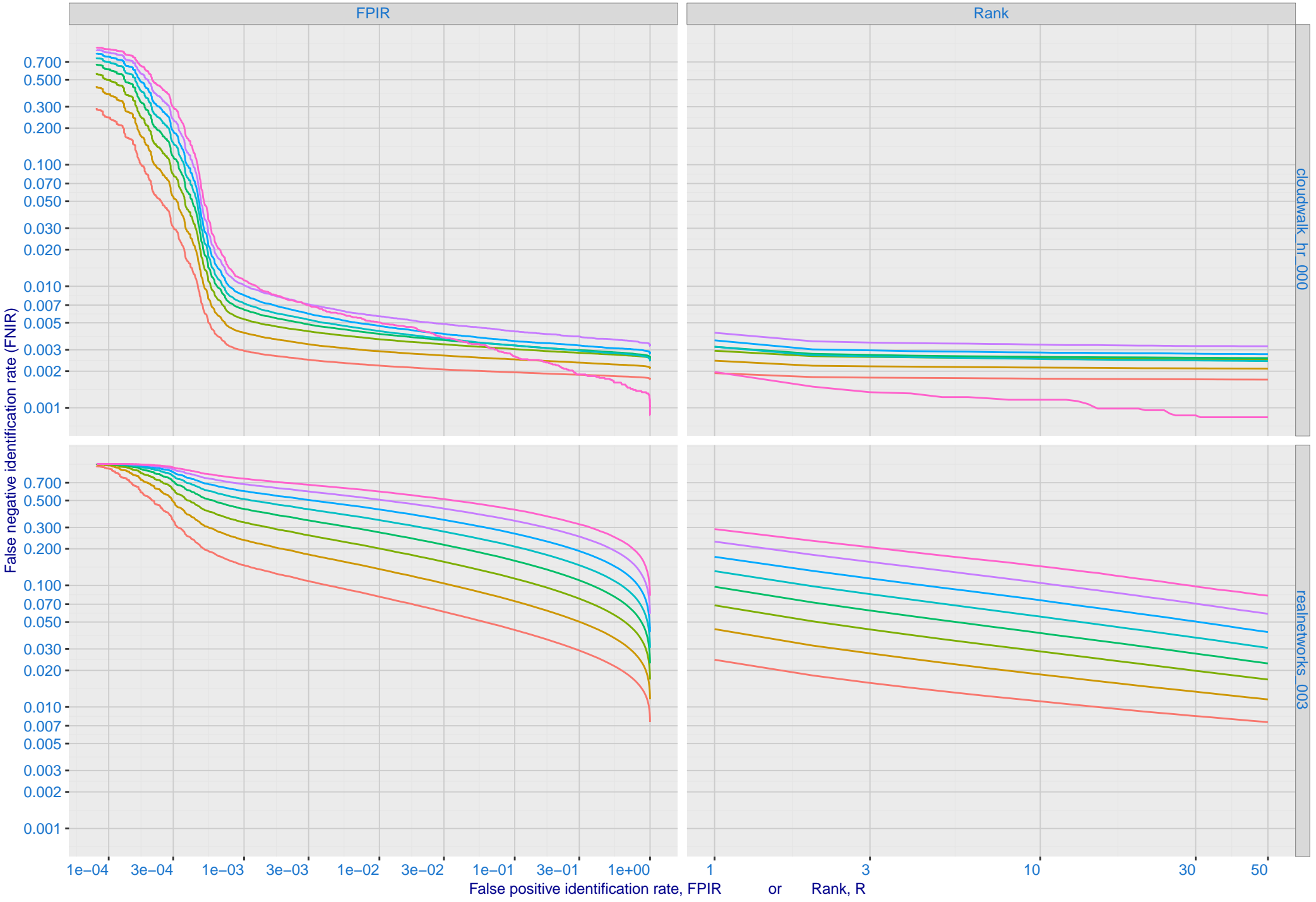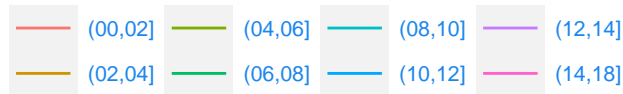L: Investigational mode: FNIR(1600000, R, 0) by probe type

M: Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power–law models are fit to the first two (N,T) observations

Q: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing

R: Decline of genuine scores with ageing, with some eventually dropping below typical thresholds shown by the horizontal lines