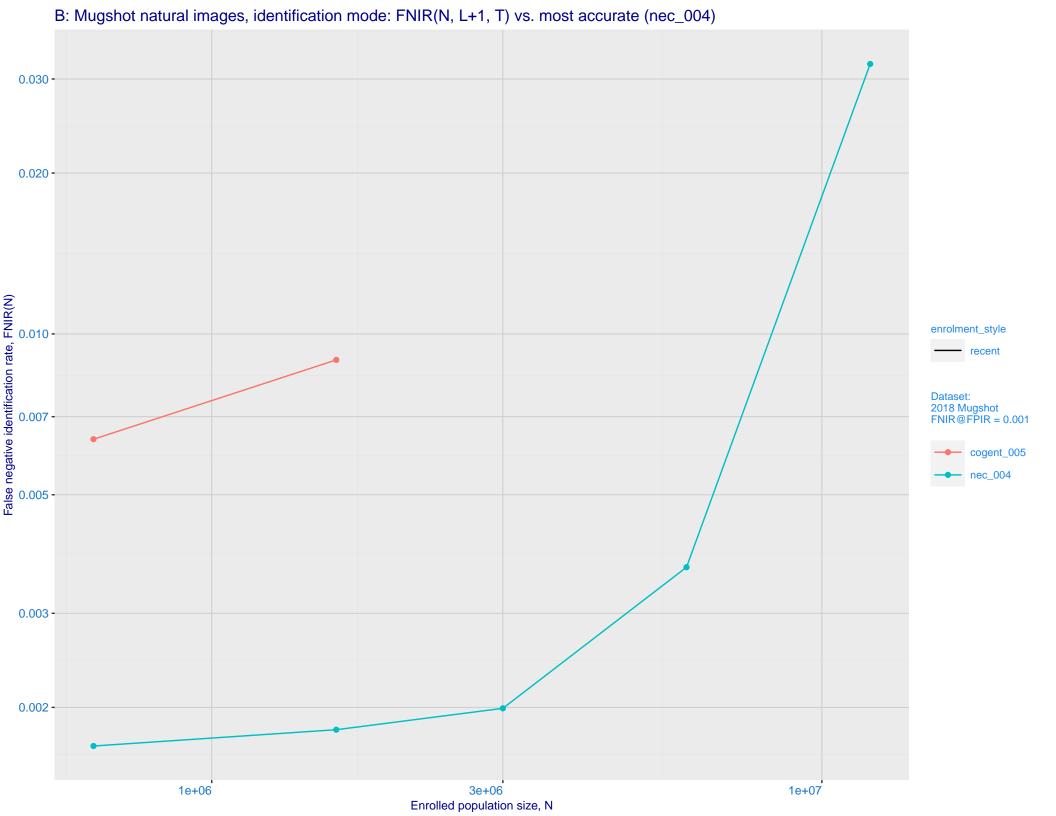
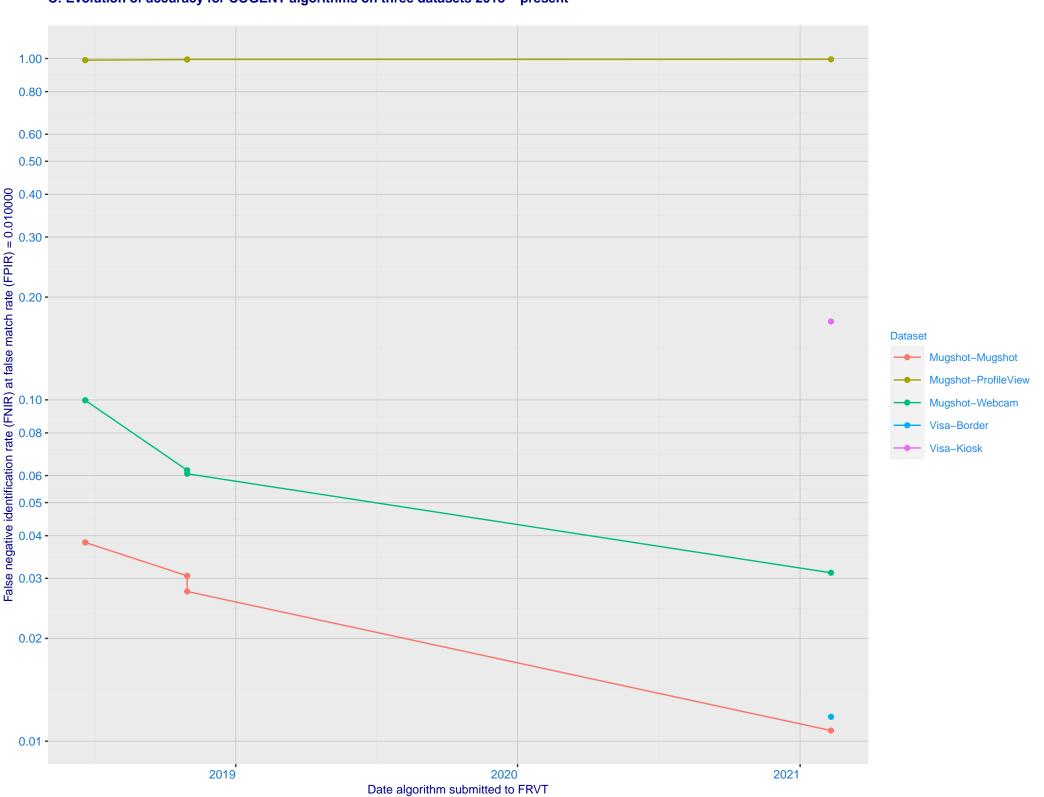
## A: Datasheet

Algorithm: cogent\_005 Developer: Thales Submission Date: 2021\_09\_13 Investigation: Frontal mugshot ranking 34 (out of 301) -- FNIR(1600000, 0, 1) = 0.0017 vs. lowest 0.0009 from sensetime\_006 Identification: Frontal mugshot ranking 24 (out of 301) -- FNIR(1600000, T, L+1) = 0.0089, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

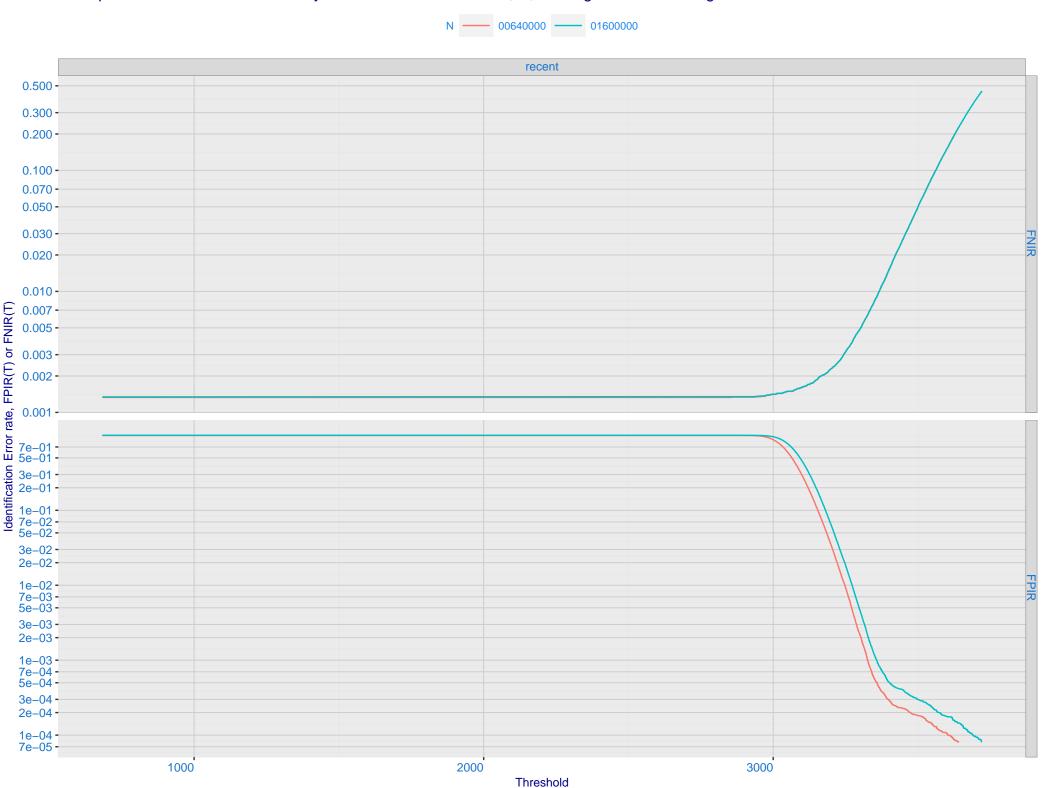




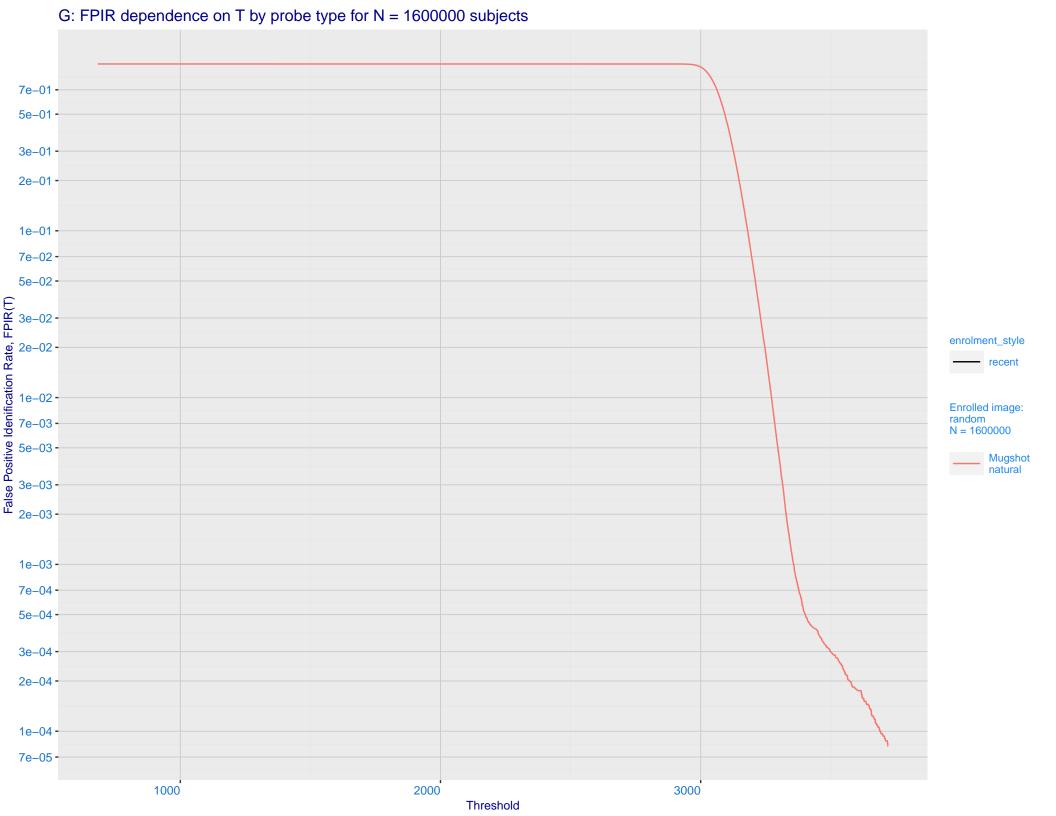
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -Ealse negative identification rate, FNIR(T) 0.003 - 0.003 - 0.001 - 0.500 - 0.500 - 0.200 - 0. enrolment\_style random-ONE-MATE recent-ONE-MATE 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -

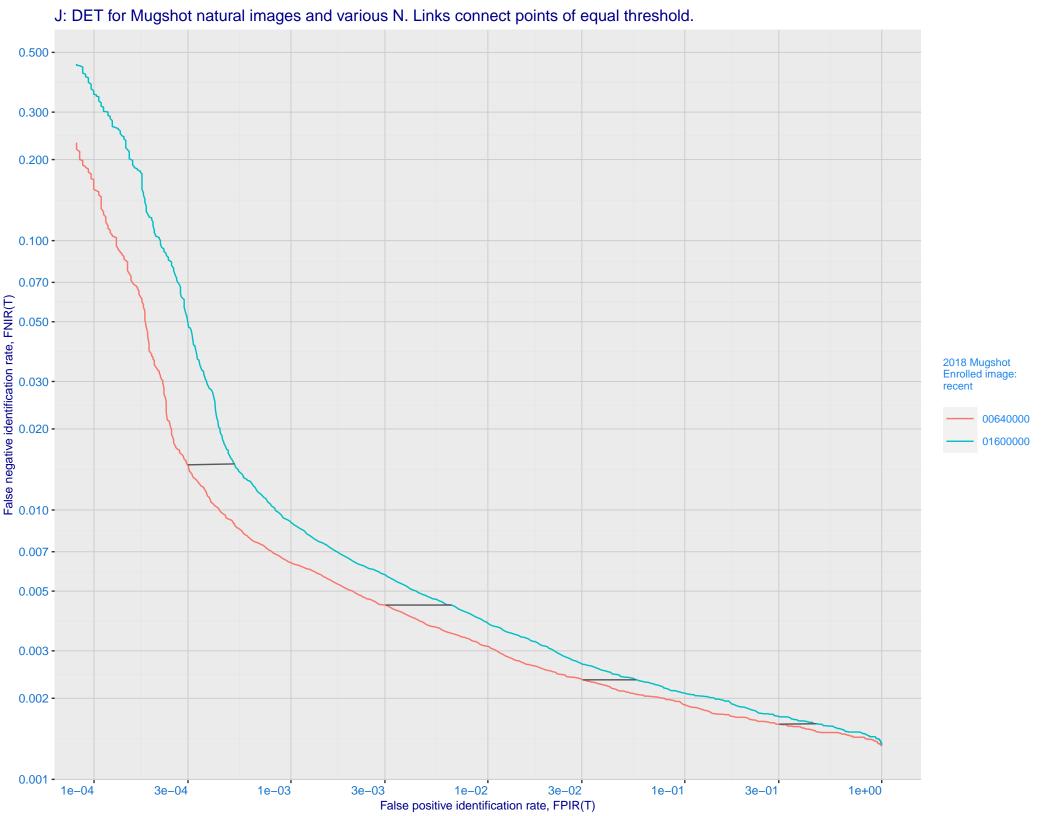
False positive identification rate, FPIR(T)

E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

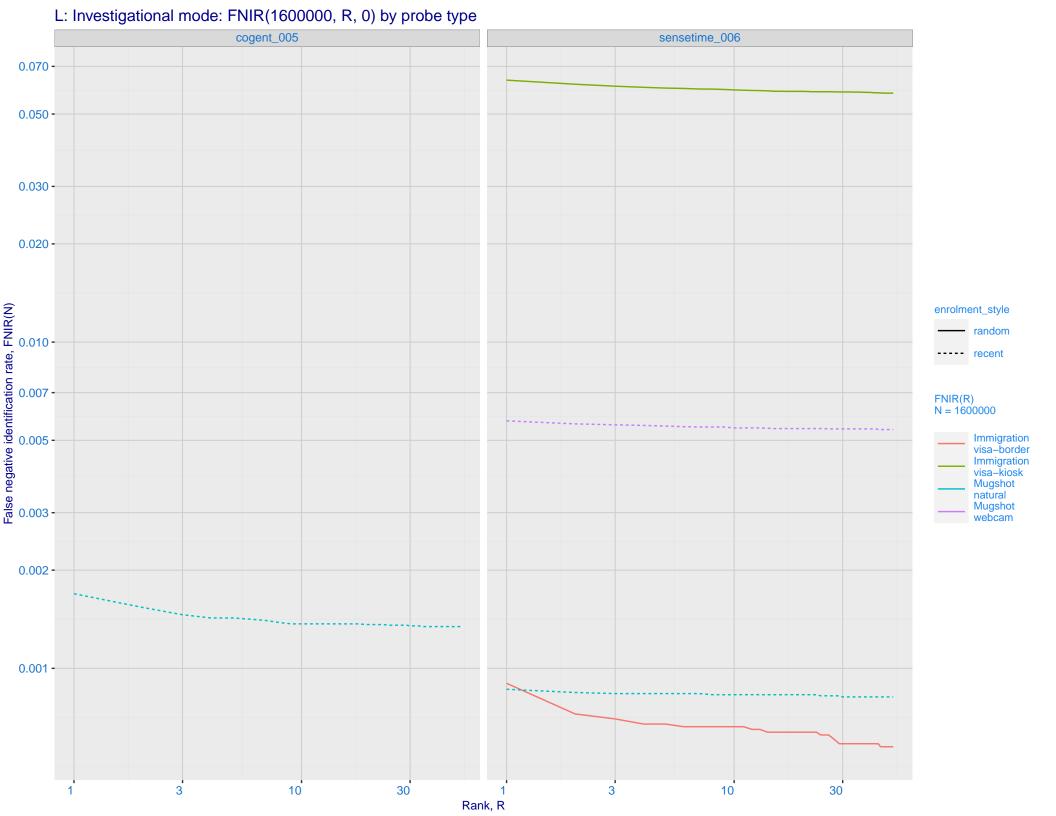


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -Selectivity, SEL(1) 7e-01 -7e-02 -5e-02 -3e-02 -Enrolled images: recent N = 1600000 Mugshot natural 2e-02 -1e-02 -7e-03 -5e-03 -3e-03 -2e-03 -1e-03 -7e-04 -5e-04 -3e-04 -2e-04 -1e-04 -7e-05 -1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)





K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime\_006) Immigration **Immigration** visa-border visa-kiosk 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Ealse negative identification rate, FNIR(N) - 0.000 - FNIR@Rank = 1 -- cogent\_005 sensetime\_006 Mugshot natural Mugshot webcam enrolment\_style random ---- recent 0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -1e+06 3e+06 1e+07 1e+06 3e+06 1e+07 Enrolled population size, N



	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
Search Duration (milliseconds)	
	Enrolled population size, N, one image per person

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



