

Table I: Comparative evaluation of ZEBRA against other continuous authentication schemes.

Scheme	Nothing-to-Carry ¹	Negligible-Cost-per-User ¹	Resilient-to-Physical-Observation ¹	Resilient-to-Internal-Observation ¹	Verifying-Actual-User ²	No-Constraint-on-Using-the-Device ²	Automatic-Deauthentication ²
ZEBRA		●	●	●	●	●	●
Passwords		●					
Proximity-based		●	●	●	●		●
Fingerprint			●				
Voice-based			●		●		●
Facial recognition					●	●	
Keystrokes-based		●	●		●	●	●
Pulse-based			●	●	●	●	●

● = offers the benefit; ● = almost offers the benefit; no circle = does not offer the benefit. ||| = better than ZEBRA; |||| = worse than ZEBRA; no pattern = equivalent to ZEBRA.

¹Properties from the UDS framework. ²Additional properties, not in UDS.