# Latent Print Quality Measures

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# Elements of Latent “Difficulty”

- Quantity - % of full print present, square area, etc.
- Clarity – Quality, Focus, Resolution, etc.
- Contrast – % of Grayscale range utilized, Average (shift), etc.
- Pressure – Vertical pressure, ridge to furrow thickness, etc.
- Slippage – Lateral pressure, ridge flow distortion, smearing, etc.
- Background – Substrate distortion, texture interference, etc.
- Focal Points – Core, Delta, Occasional features, Major flow convergence/divergence, etc.

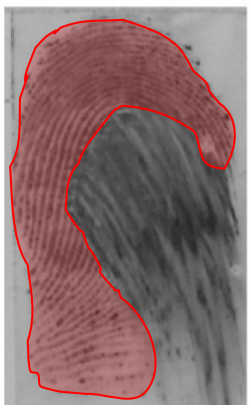
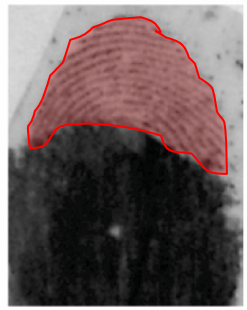
# Verification Packet Worksheet

**ANSWER SHEET**

| LAT. # (in order) | Quant 1-5 | Clarity 1-5 | Contrast 1-5 (L-D) | Pressure 1-5 | Lateral 1-5 | Bckgrnd 1-5 | Focals 1-5 | TIME (min) per latent | LAST NAME of identified (please print) | FINGER NUMBER | Confidence 1-3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| F2-01 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 2 | Locard | 4 | 3 |
| F2-02 | 4 | 4 | 3 | 4 | 3 | 4 | 3 | 30 | Thompson | 1 | 3 |
| F2-03 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | Cummins | 2 | 3 |
| F2-04 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | Chatterjee | LP | 3 |
| F2-05 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | Hale | 2 | 3 |
| F2-06 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 2 | Bidloo | 7 | 3 |
| F2-07 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 2 | Locard | 5 | 3 |
| F2-08 | 4 | 5 | 4 | 3 | 4 | 4 | 4 | 10 | Thompson | 2 | 3 |
| F2-09 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 8 | Chatterjee | RP | 3 |
| F2-10 | 5 | 4 | 3 | 3 | 3 | 3 | 4 | 10 | Cummins | 8 | 3 |

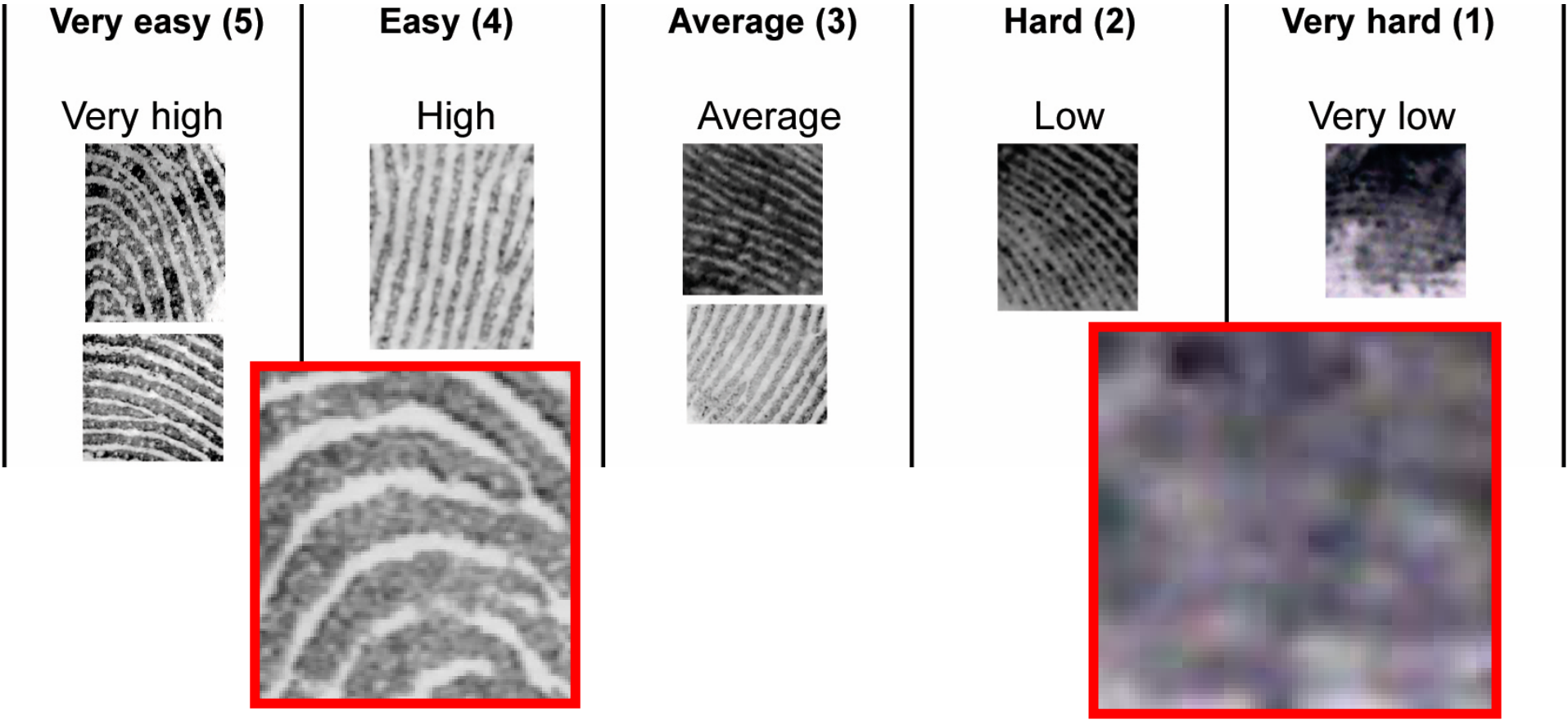
# Examples

- Quantity - % of full print present, square area, etc.

| Very easy (5) | Easy (4) | Average (3) | Hard (2) | Very hard (1) |
|---|---|---|---|---|
| >50% | 30-50% | 15-30% | 5-15% | <5% |
| |  | |  | |

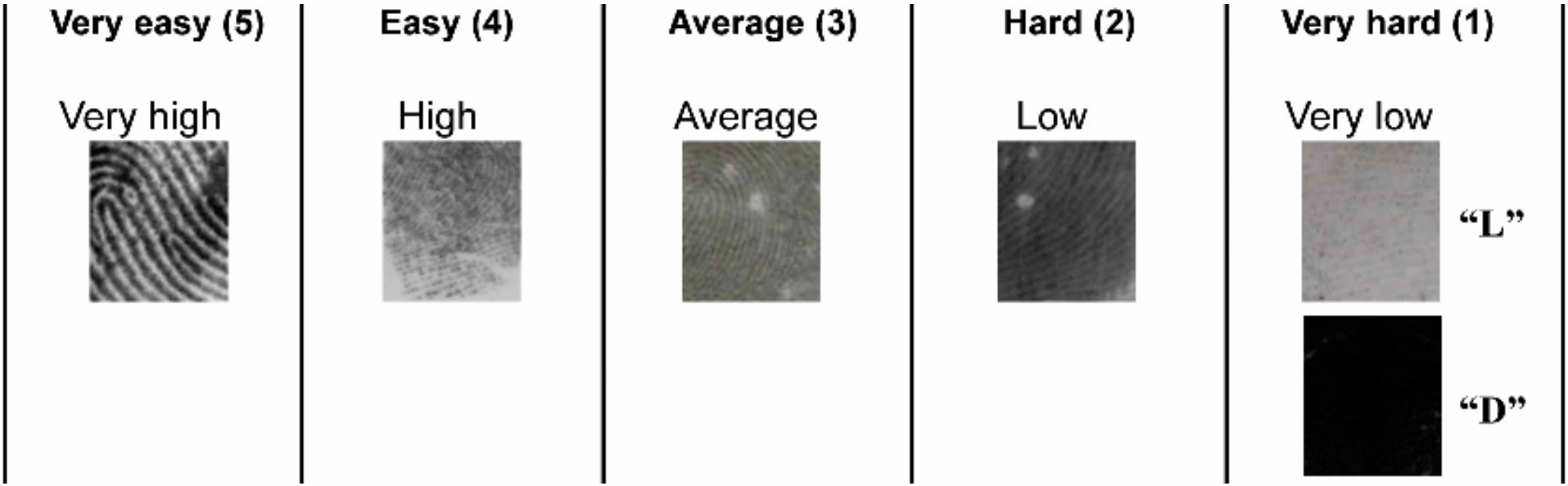
# Examples

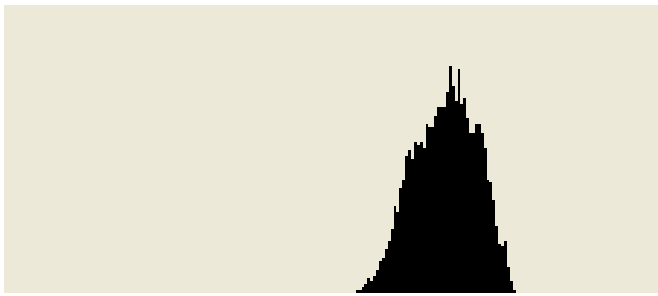
- Clarity – Quality, Focus, “Crispness”, Resolution, etc.



# Examples

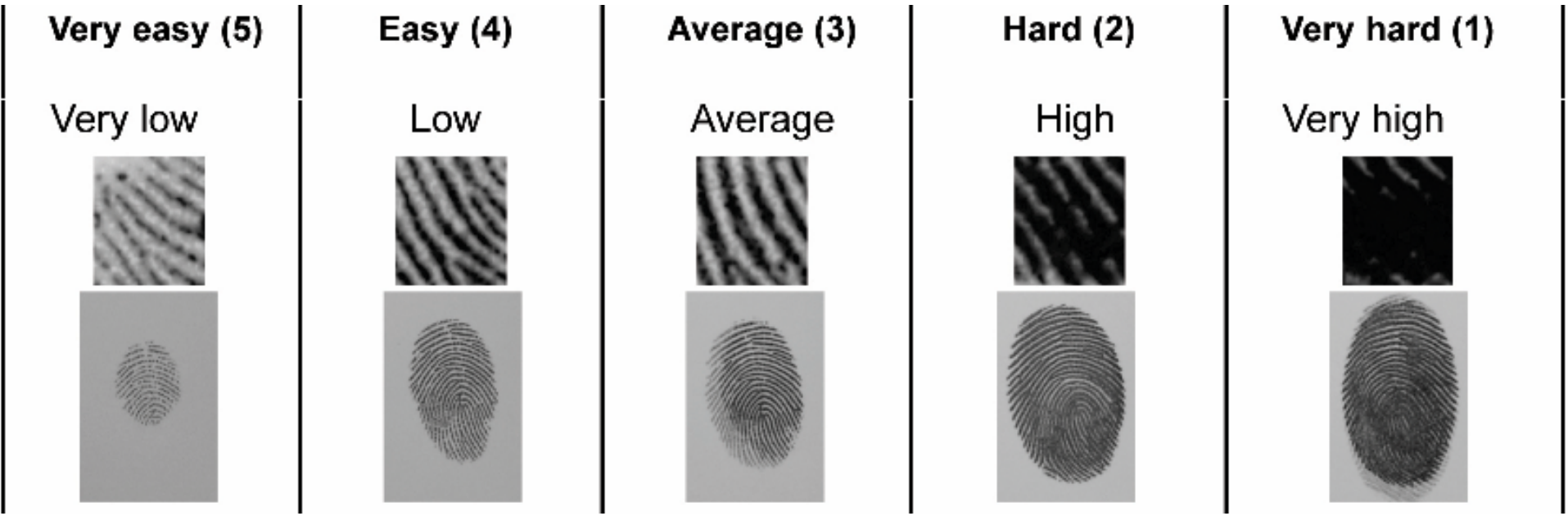
- Contrast – % of Grayscale range utilized, Average (shift), etc.





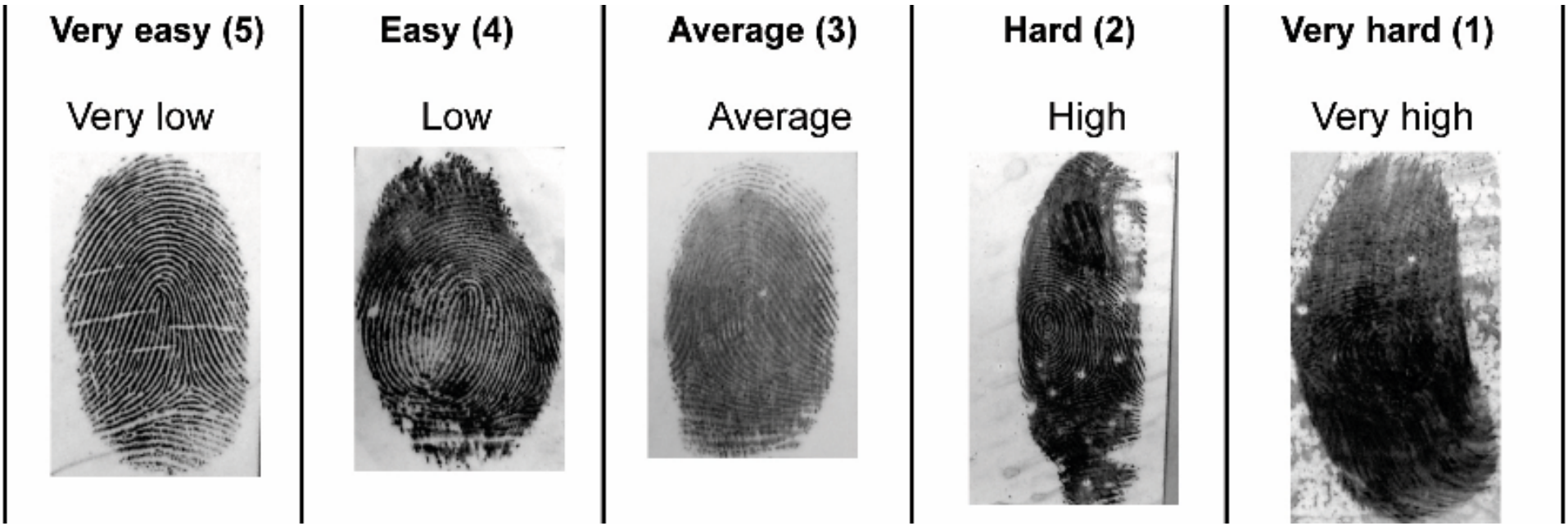
# Examples

- Pressure – Vertical pressure, ridge to furrow thickness, etc.



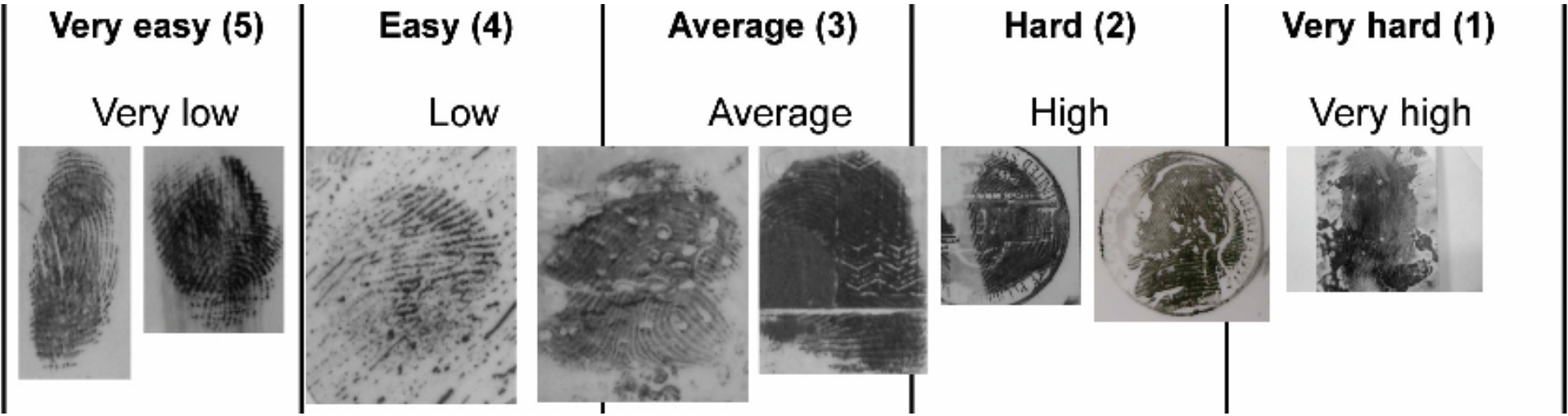
# Examples

- Slippage – Lateral pressure, ridge flow distortion, smearing, etc.



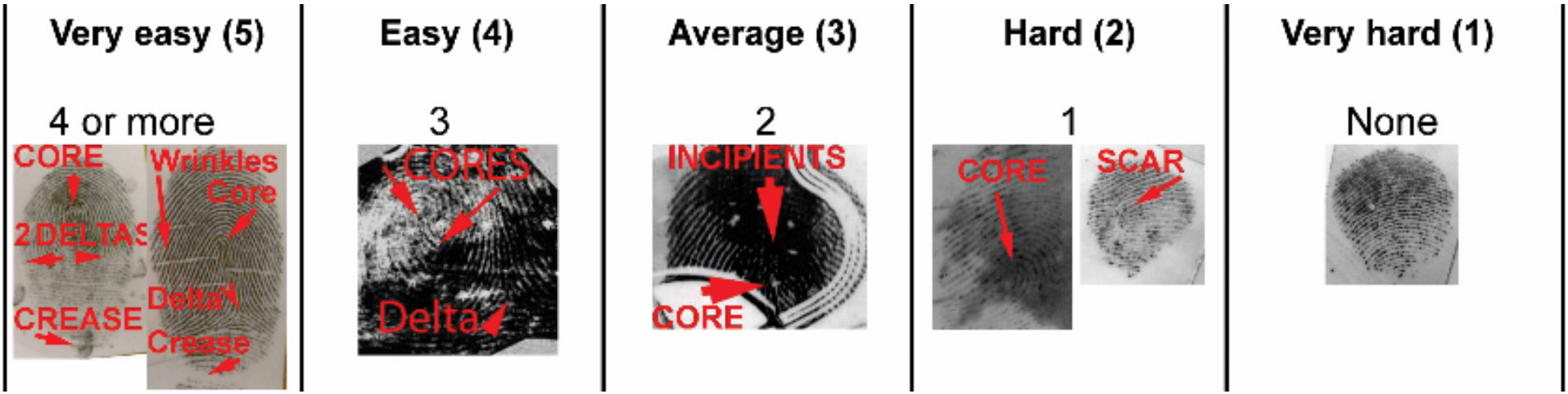
# Examples

- Background – Substrate distortion, texture interference, etc.



# Examples

- Focal Points – Core, Delta, Occasional features, Major flow convergence/divergence, etc.



# Discussion

- Are there other elements?
- Do current automated quality algorithms capture these elements?
- Can they be refined to do so?
- What role should human examiner perspectives/experience play in shaping how automated quality measures are defined?

# Contact Information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