

JPEG 2000
Profile for 1000ppi
Fingerprint Compression

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www.mitre.org/work/tech_papers/tech_papers_04/lepley_fingerprint/

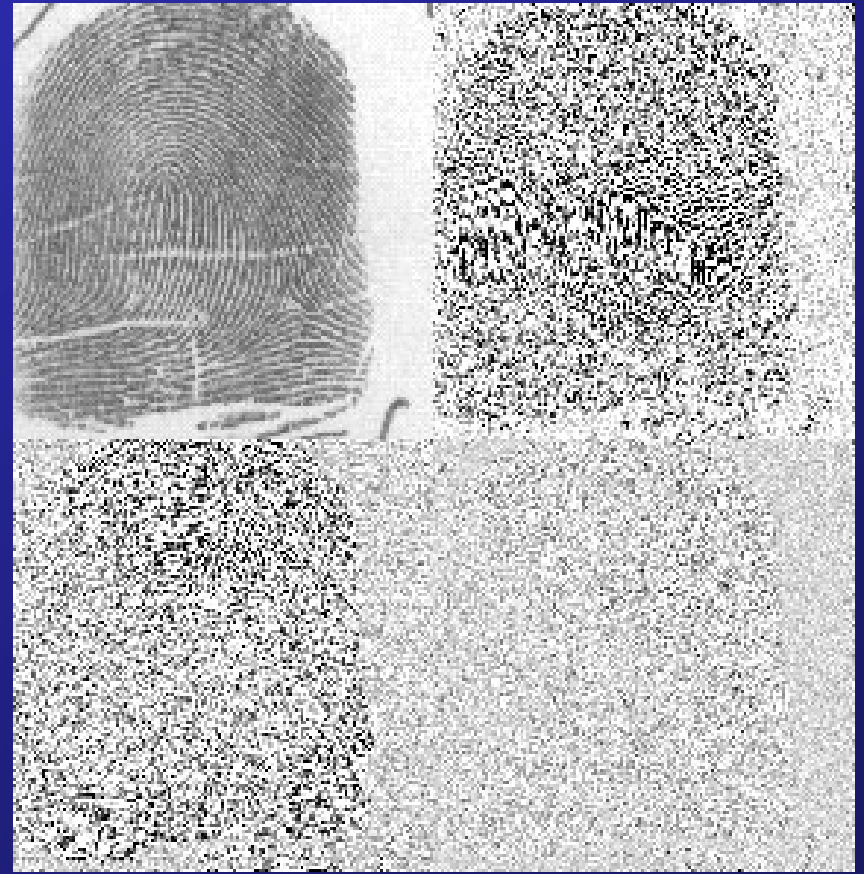


Compression Requirements

- **Efficiency – Image Quality**
- **Backward Compatibility (500 ppi)**
- **Independent compression ratios
(500 @ 15:1 & 1000 @ 15:1)**
- **Certification procedure**

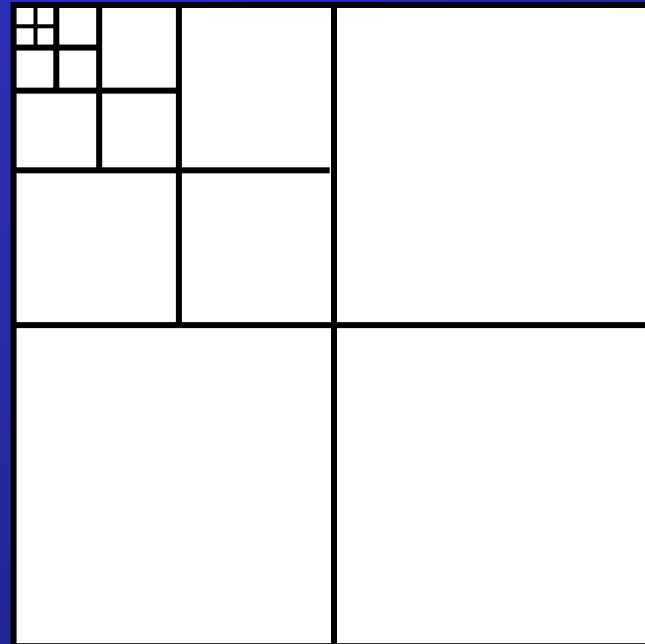


Wavelet Transform





Wavelet Transform 5-level





WSQ

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24						
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	
54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83



JPEG 2000

- **Excellent image quality**
- **Similar to WSQ**
- **Already a standard**
- **Includes required functionality**
- **Quality and resolution scalability**
- **COTS support**



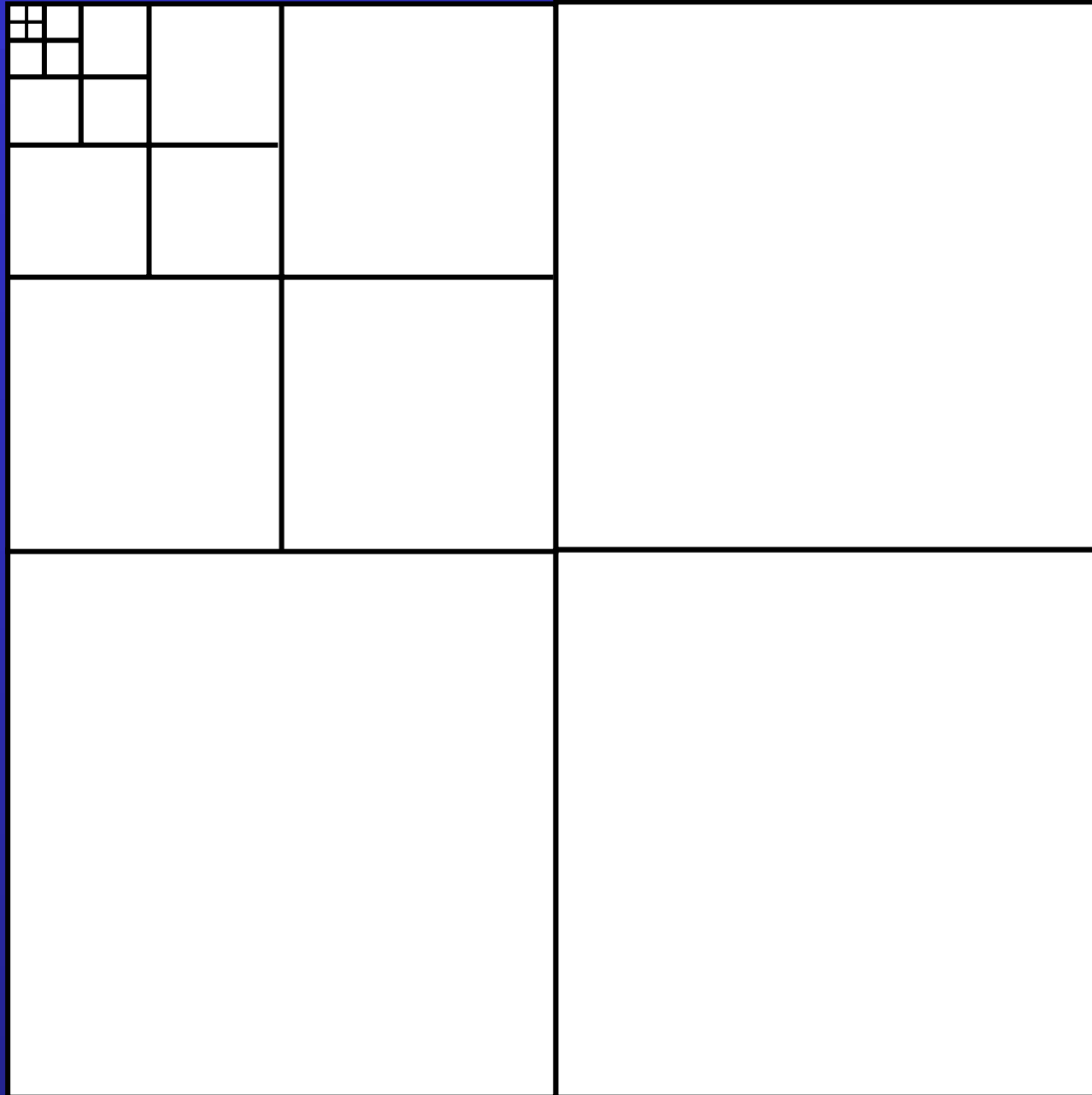
Profile for 1000 ppi Fingerprint Images

**Restricted subset of the JPEG 2000
parameter settings**

- **Insure image quality**
- **Interoperability**
- **Transcoding to 500 ppi WSQ**
- **Certification criteria**

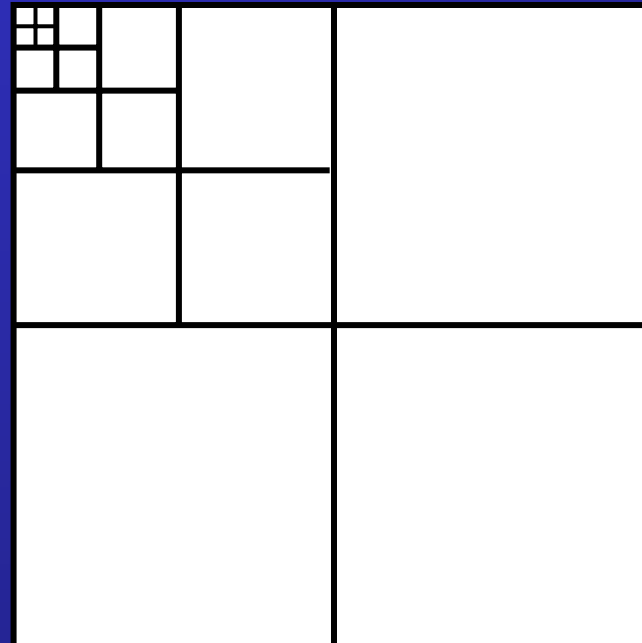


1000ppi J2K < 15:1





J2K 5-level 5:1





500ppi Image





WSQ

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24						
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	
54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83