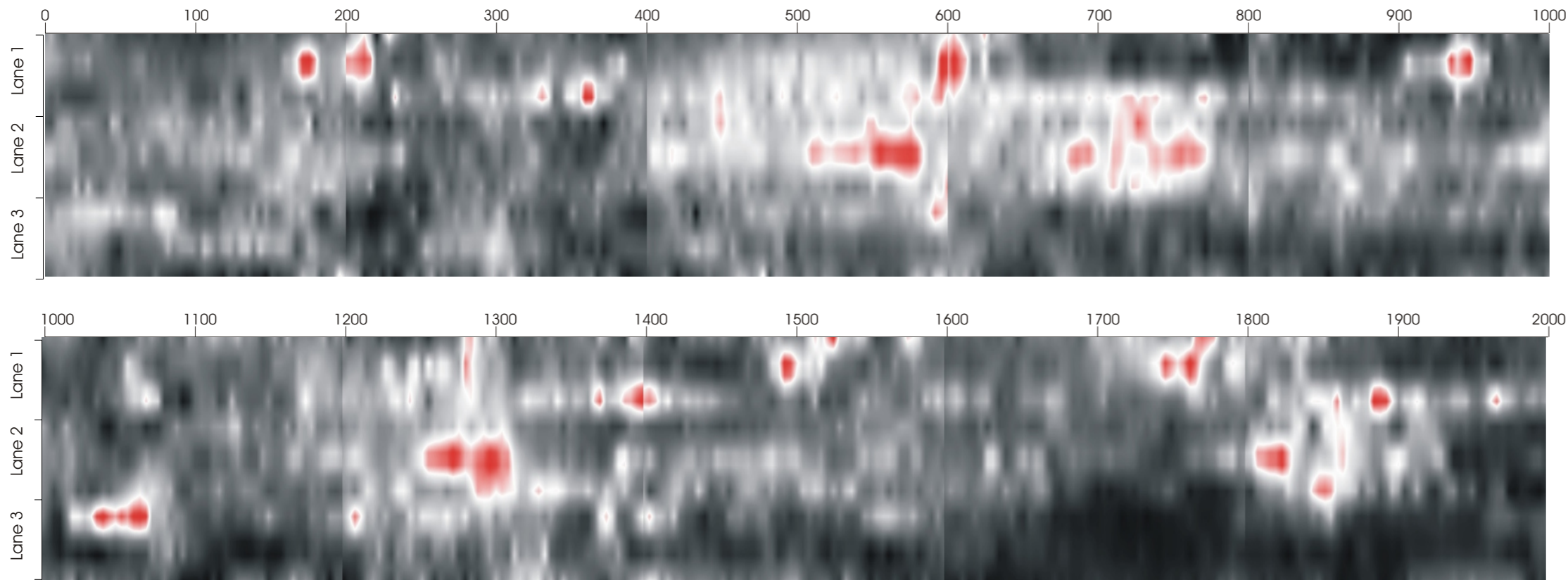
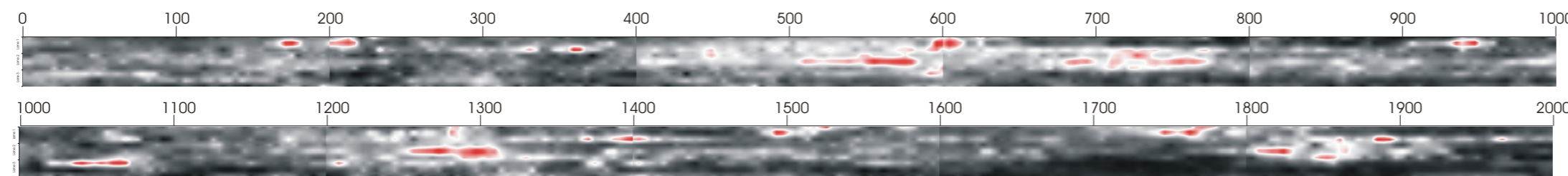


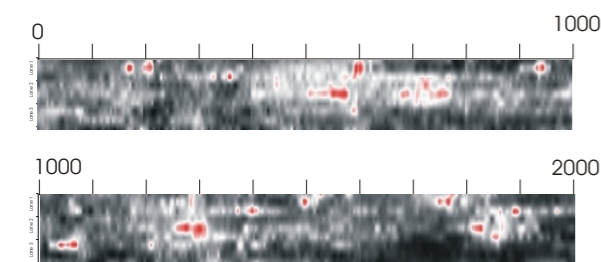
# High Speed Impulse Radar Investigation of the M6 Motorway - Moisture investigation at base of the bit.



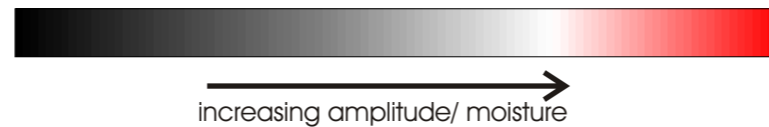
Original Scale at A0 Horizontal 1: 1250  
Vertical 1:100



Original Scale at A0 Horizontal 1: 1250  
Vertical 1:500



Original Scale at A0 Horizontal 1: 5000  
Vertical 1:500



## Case Study- Moisture/ Debonding investigations

### Amplitude Analysis / Moisture Plots

The method of interpretation of the moisture data is as follows:

The returned signal strength is governed by the contrast in electrical properties (conductivity) at the interfaces under investigation. The most common reason for significant changes in reflection strength occurring along an interface is the presence of moisture ingress along the interface and within any porous material. The degree of moisture is shown by the strength of signal amplitude returned. Increased amplitude of signal indicates increase moisture ingression.

The radar data is analysed and horizontal cross-sections are produced showing relative moisture changes. These changes are indicated by colour coding of the plots. In a pavement of consistent construction the plots are inspected for variations along individual layer interfaces. No significance can be made of changes in amplitude with depth as the amplitude response is governed largely by material types and contrasts between materials. Horizontal changes are the indications of moisture changes and/or material condition. The top band of any signal amplitude plot is the result of the surface reflection/ refraction and should be ignored.

The vertical sections are used to locate relatively small anomalies and to locate the depth and structure of these anomalies.

Any anomalies located (usually regions dominated, in comparison with surrounding regions, by red and sometimes yellow) can be investigated by comparing these results with other survey results e.g. deflections, surface deterioration, surface depressions or coring.

### Data presentation

The resultant interpreted data can be presented in various forms. The most common forms are as follows

1. Digital presentation in E-book, PDF or Html.
2. A0 plans

Drawings are presented as hard copy and electronically. Most drawing formats can be accommodated including those used by Autocad, Mapinfo and Arcinfo.

The data presented here is from the M6 motorway. Moisture was known to have been a problem and impulse radar was used to locate the areas where the highest moisture occurred and to target the source of the water.



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