Thus, in the embodiments shown in **FIG. 18** and **FIG. 19**, there is no requirement for adding connectors after a fabric has been created. The provision of a connector to the electric current carrying fibres is achieved during the actual mechanical process itself. Thus, for example, if the fibres are being produced by a knitting operation, part of this knitting operation involves procedures by which the electrical current carrying connector is actually included as part of the overall knit.

[**0099**] Fibres **1801** making up the weave are illustrated in **FIG. 18**. A weaving procedure may be considered as generating woven fabric by traversing in the direction of arrow **1802**. At pre-programmed positions, or at manually selected positions, modifications are made to the weaving process to the effect that a connector **1803** is to be introduced.

[**0100**] In the example shown in **FIG. 18**, connector **1803** is an insulation displacement connector (IDC) allowing an insulated wire to be connected in such a way that it is not necessary to remove the insulation from the wire, given that the insulation is effectively cut as the wire, illustrated by reference **1804** is inserted into the connector in the direction of arrow **1805**.

[**0101**] The weaving procedure is modified such that connector **1803** is included as part of the weave and is thereby held relatively firmly after the weaving procedure has been completed. In order to provide a further enhanced mechanical connection between electrical connector **1803** and the remaining woven fabric, additional layers of electrically conducting epoxy resin **1805** and **1806** are applied, such that, in operation, physical force applied to connector **1803** will not, under normal circumstances, be displaced from the woven material of the device and will maintain electrical integrity.

[**0102**] A similar configuration is shown in **FIG. 19** in which a rivet fastener **1901** is applied during a weaving or knitting process, thereby substantially embedding the rivet fastener within the overall weave or knit. After the rivet fastener has been secured by the woven fabric **1902**, electrically conducting epoxy resin **1903** is applied to provide enhanced mechanical and electrical stability.

[**0103**] In the configuration shown in **FIG. 1** and in the configuration shown in **FIG. 16**, an electrical field is established over the transmitting plane. Given a plane of infinite size, the electrical field would have a regular geometric distribution and the position of a mechanical interaction could be determined from two voltage measurements in a substantially straightforward way. However, in the configuration shown in **FIG. 1** and **FIG. 16**, edges are present and these edges introduce severe distortions to the nature of the electric field from which measurements are being taken. In the control circuit **121** and within the data processing system **131** it is possible to provide a level of compensation, possibly in response to empirical measurements but such an approach has disadvantages, one of which being a loss of resolution.

[**0104**] Systems are shown in **FIGS. 20 and 21** in which a detector is constructed from fabric having electrically conductive elements to define at least two electrically conducting planes. The detector is conFigured to produce an electrical output in response to a mechanical interaction. The relationship between mechanical interaction and electrical output is enhanced by introducing a conductivity non-uniformity which is included in at least one of the planes so as to modify an electrical response to the mechanical interaction.

[**0105**] In **FIG. 20**, an electrical connector **2001** is connected to a plane at a first corner and a second connector **2002** is connected to the diagonally opposing corner. A configuration of this type could be used for a detector of the type shown in **FIG. 1**, in which the electrical field effectively traverses across the diagonal corners, resulting in distortions at the edges. In the embodiment shown in **FIG. 20, a** conducting thread **2003** with relatively low resistivity is included across edge **2004**, electrically connected to connector **2001**. Similarly, a second conducting thread **2005**, with relatively low resistivity, extends from electrical connection **2002** along edge **2006**. In this way, the whole of edge **2004** becomes conducting and the whole of edge **2006** becomes conducting. The resulting electric field is then substantially linear throughout the length of the detector thereby substantially eliminating non-linear edge effects.

[**0106**] In its co-operating plane **2010** a low resistance conducting thread **2011** is included along edge **2012** and a similar conducting thread is provided along the opposing edge. In this way, the electric field traverses in a direction which is orthogonal to the electric field provided in the upper sheet, thereby allowing co-ordinates defined in mutually orthogonal coordinate space.

[**0107**] A conducting material is shown in **FIG. 21** in which areas **2101**, close to all four edges, have had their conductivity modified, such that the overall conductivity of the sheet is non-uniform. This modification to conductivity may be achieved in several ways, including the addition of a conducting thread of the type illustrated in **FIG. 20**. Alternatively, the modification to conductivity, to provide conductivity non-uniformity, may be achieved by a printing operation in which electrically conducting inks, possibly including silicon, are printed at region **2101**. Alternatively, the density of conducting fibres in the woven material itself may be modified towards the edges of the detector, again resulting in a conductivity non-uniformity. Furthermore, it should be appreciated that modifications of this type may be achieved using combinations of the above identified effects in order to tailor the required level of non-uniformity for a particular application.

[**0108**] In the configuration shown in **FIG. 1, a** cycle is performed in which upper plane **102** effectively transmits allowing signals to be received by lower plane **103**. A co-ordinate position is identified by reversing the operation of these planes, such that certain parts of the cycle include situations in which the lower plane **103** is effectively transmitting and the upper plane **102** is effectively transmitting. In a configuration of this type, it is preferable for the material types to be similar so as to provide substantially similar operations when plane **102** is transmitting or when plane **103** is transmitting. This is a particularly important constraint when the system is being used to measure current flow, given that different resistivities could be achieved in the different directions of current flow.

[**0109**] In the configuration shown in **FIG. 16**, transmission always occurs from plane **1621**, although in different orientations, and detection always occurs from plane **1622**. With a configuration of this type, current always flows in the