

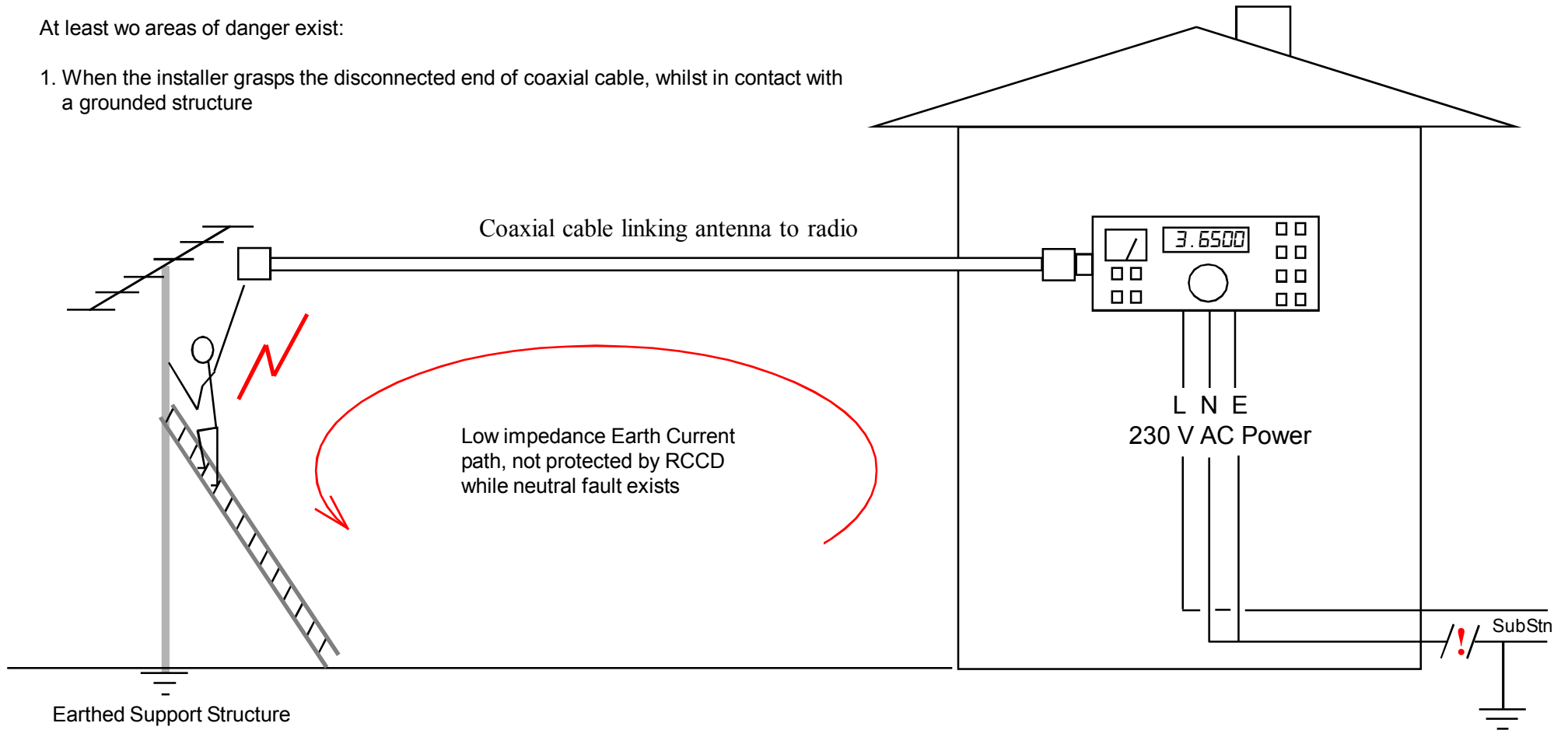
Introduction:

This technique is proposed as means of providing a high impedance to 50Hz currents between Electrical Class-1 (earthed chassis) radio equipment within a dwelling and earthed structures, such as an antenna mast, outside the dwelling.

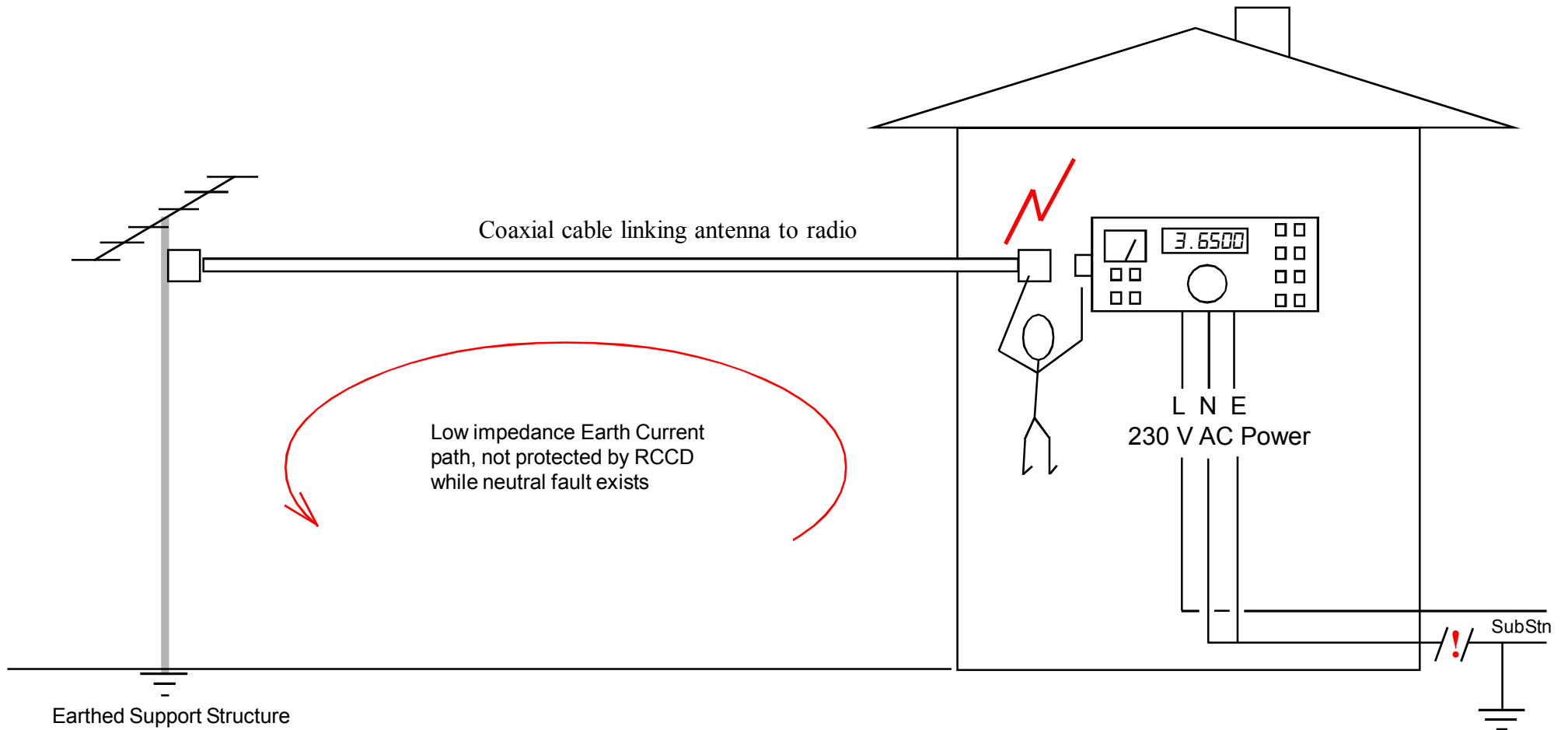
It was devised to allow a coaxial cable to provide an RF connection between the indoors Class-1 equipment and an external antenna, which is a common requirement. This is to enhance the safety of such systems which may be powered from a PME distribution system, in the condition of a broken neutral line to the property.

At least two areas of danger exist:


1. When the installer grasps the disconnected end of coaxial cable, whilst in contact with a grounded structure

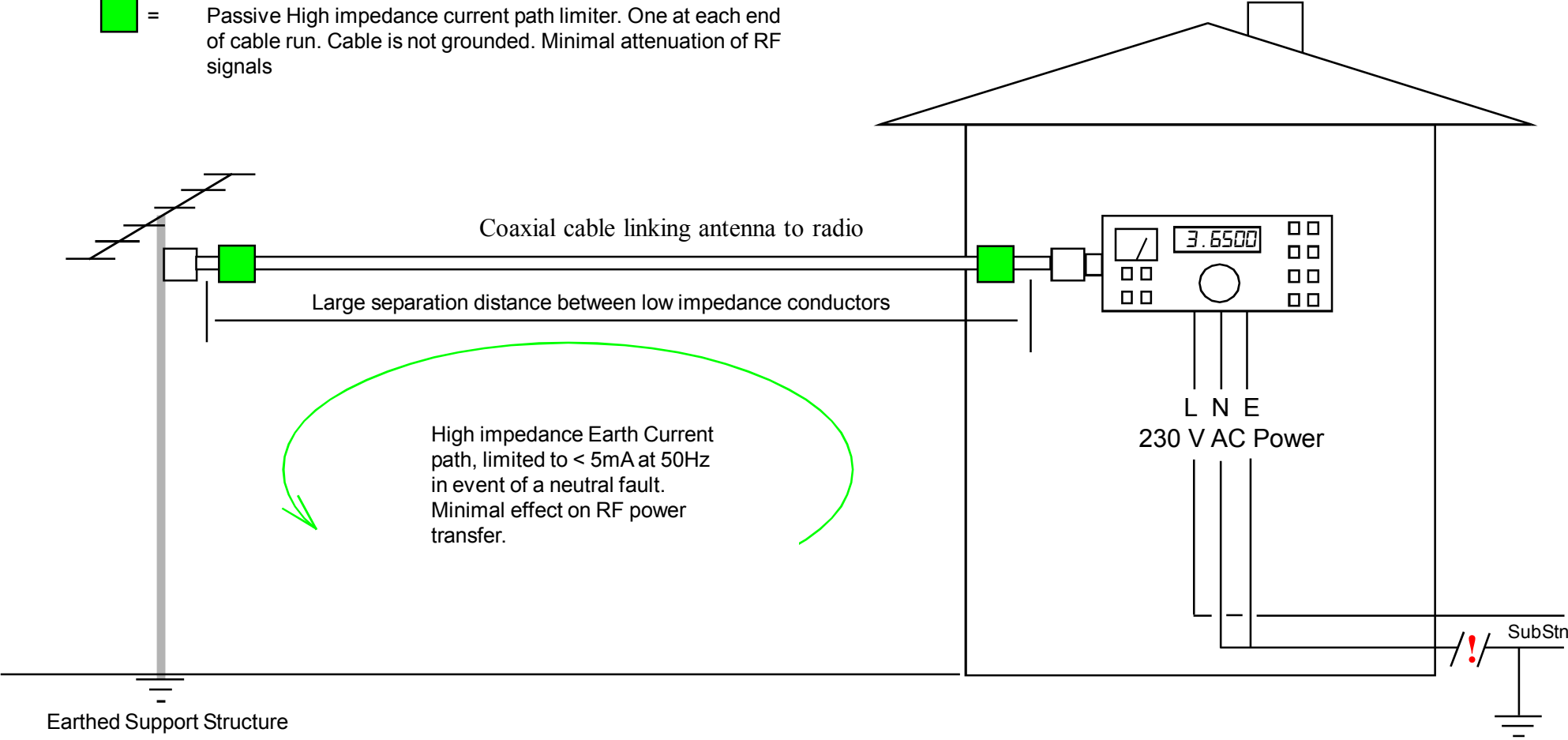


2. When the user grasps the disconnected end of the coaxial cable, whilst in contact with the radio



Now, the user or installer may grasp either end of the free cable and not risk shock when neutral fault present.

 = Passive High impedance current path limiter. One at each end of cable run. Cable is not grounded. Minimal attenuation of RF signals



C provides high impedance at low frequency and low impedance at high frequency
 GDT provides a well defined hard limit for max static charge permissible across capacitors, to ensure V rating never exceeded
 R provides a controlled low noise discharge path to bleed charge from the system

C = 30nF Y2
 GDT = 500V Gas discharge tube
 R = 2 x 470 kilohm 250V 0.6W in series

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