PS3 HDD Replacement

The HDD of a PS3 can be replaced. This does not affect warranty and the PS3 manual actually contains details of how to replace it.

A few things to note:

1. The PS3 does not support HDDs larger than 1.5TB (untested), most use 1TB HDDs
2. Physical specs of the HDD: 2.5", 5400RPM and no more than 9.5mm in height (most are 7mm or 9mm these days)
3. The PS3 wipes, partitions and formats the drive itself if it is compatible.
4. The PS3's firmware needs to be installed on the new drive. Ensure to have those on a USB stick
5. A backup of the PS3's internal HDD to an external HDD via the System → Backup function is required. Depending on the amount of content, this takes hours. About 200GB take 5-6 hours to back up and likewise to restore.
6. PS3 uses UFS2 filesystem encrypted in XTS-AES-128 (SLIM consoles) or AES-CBC-128/AES-CBC-192 (PHAT consoles). To access the content of the drive, two ATA encryption keys ("ATA tweak" and "ATA data") need to be dumped from PS3 via OtherOS and Linux is required to mount it.

More details here: http://www.psdevwiki.com/ps3/Harddrive

Now, the process to replace the HDD is as following:

1. Get external USB HDD formatted with FAT32 with at least the same size as the internal HDD for backup
2. Download firmware and store it in the folder PS3/UPDATE/PS3UPDAT.PUB either on a separate usb stick or on the ext HDD
3. Connect the ext HDD to PS3, go to Settings → System Settings → Backup Utility and back up the internal data. Trophies are not backed up so they should be synced to the Sony network before replacing the HDD
4. Physically replace the HDD (use google for details)
5. Disconnect PS3 from network if custom firmware is being used to avoid download of any official firmware
6. Connect PS3 controller via USB and external USB drive
7. Power on and follow instructions to format and install the firmware onto the new drive
8. Go through initial PS3 setup, the entries do not matter, they will be restored from the backup
9. Go to Settings → System Settings → Backup Utility and restore the backup