DiscLogin

From Dvd-game

Disc login is the procedure when the drive reads in a disc.

It consists of a few steps:

- Test for medium
- spinup
- reading leading
- do BCA check
- do DMI check

[40EAD2,40EAD2,40EAD2] contains a value which is related to the process.

(Note: LaserFocus is probably more a "do something to somewhat". It remains with this name until i find out what it really does. It somehow issues lowlevel commands to the analog controller)

- 00
- 0A - [89A13,89A17,89A79]
    - Clear (2, 0x3030) (again, this is task 2, events 0x1000, 0x2000, 0x0020, 0x0030)
    - Init some variables
    - Init checklist [40ECE2,40ECE2,40ECE2]
    - Init some more variables
- 0C - [,,89AE4]
    - Lowlevel Command: 00 78 02
    - Toggle [40000E] 0x02 (set-reset)
    - 00 10 08 7F (00 00 00 00 00 00) (Login_Table_1)
    - 00 11 08 01 00 03 04 (00 00 00) (Login_Table_2)
    - 00 12 00 (00 00 00 00 00 00 00) (Login_Table_3)
    - 00 13 92 3F 46 01 (00 00 00 00) (Login_Table_4)
    - Toggle [40000E] 0x04 (set-reset)
    - 00 00 20 00 06 2D 40 22 00 00() (Login_Table_5)
    - 00 08 A0 00 00 20 40 2C 06 00() (Login_Table_6)
    - 00 0A 00 00 00 00 AD 80 40 80() (Login_Table_7)
    - Do the stuff at [,,0008B35E] (this includes some 0x78, 0x79 call to some wrapper of the "LaserFocus" stuff which is black magic)
    - This stuff can fail. Otherwise, 0E is reached.
- 0E
    - Toggle [40000E] 0x01 (set-reset)
    - Wait for controller [400804:7] to be set. Yields to other tasks (so it seems to can take a lot of time). If timeout -> fail
    - saves some variables [,,8B28E]
    - LaserFocus(0x1FA, 0x77&0x8F, 1), if fail -> return
    - LaserFocus(0xFA, 0x70, 1), if fail -> return
    - LaserFocus(0x1FA, 0x77, 1), if fail -> return
    - LaserFocus(0x2FA, 0x43, 1), if fail -> return
    - for i=0; i<0x100; ++i: LaserFocusWrapper(Table[i], Table2[Table[i]], 0);
    - (seems to initialize register defaults!!)
    - LaserFocus(0x4FF, 0, 1);
    - LaserFocus(0x4FF, 1, 1);
    - LaserFocus(0xED, 0x23, 1);
    - LaserFocus(0xEE, 9, 1);
- 10
    - 00 10 0D 7F (&~7, |3 !)
- 13
    - now, bit 0x80 from HLCommand is converted to 2
    - bit 0x40 to 1 (in SomeCheckVar [,,40ECF4])
    - if some bit was already set, continue with 32
- 14 - test for medium
    - LaserFocus(0xF0, 0, 1);
- 16
    - LoginDoSomething(0x2F1, 0x6E) ([,,8B98E])
- 18
    - LaserFocus(0x1F2, 0x95, 0x64);
- 1A
    - call [,,89BAD] (SetLaserEnable(0, 1))
- 1B
    - DiscLoginRelated == [,,808C]
    - if (!DiscLoginRelated) MediaPresentRetries=0; D3=3
    - if (DiscLoingRelated)
        - res = IsmediaPresent [,,89C40] ("shortcut")
    - else:
        - LoginDoSomething(0xFF1, 0)
        - MediaPresentRetries++; if > 3 -> bail out (with 1C)
        - LoginDoSomething(0x1F1, D3)
        - D3++; if (D3 > 6) D3=6;
        - if !isMediaPresent() -> loop
        - LoginDoSomething(0xFF1, 0);
    - if ok -> 1D, else 1C
- 1C - no media found
- 1D - media ok
    - now, execute "checklist". this includes 1e, 28/64, 32, 5a.
- 1E - spinup...
    - if (!DiscLoginRelated) && (MediaPresentRetries):
        - LoginDoSomething(0x2F1, 3*MediaPresentRetries+2)
    - LoginSomething2(2, 0x1e) [,,8B66C]
- 20
    - Login_8 = 1;
    - tries = 3;
    - ...
- 22
    - ... dvd+ problem lies here..
- 27
    -
- 28 - ...
- 31

- DiscCheck32:
- 32
- 3C
- 45

- 46
- 4F
- 50
- 59

- DiscCheck5A:
  - Check SomeCheckVar for bit 0x04: if cleared, skip.
- 5A
  - S_000a[5] |= 70
  - loop 8 times:
  - [,,8C7F5] Try(Table0[i], Table1[i], &val);
  - if (val < min) { minindex = i; min = val;)
  - store min values
- 5C
  - Get Min0, Min1
  - Min1 += 2, then clamped to 4..1f
  - while (Min0 < Min1):
    - Try(Min0, Min1)
- 5E
  - calc min*100
  - depending on S_000A[5]:
    - .111....: 0x693
    - .011....: 0x27F
    - .110....: 0x342
    - .010....: 0x13f
    - .101....: 0x107
    - .001....: 0x64
  - (ok, these are factors: 1.00, 2.63, 3.19, ..., and the calculation is min*factor, with proper rounding)
  - The result is stored.
  - the result is devided by 23.81 and then stored, too.
  - finally, the 78_79 stuff (laser related!) is set according to the table values.
  - 00 08 is sent again (byte 6 |= 0x40)
  - 00 0A is sent again (byte 5 &=~0x70)
- 63 - ok...
- 64 - reading BCA
- 6D - BCA invalid
- 6E - DMI read
- 76 - DMI check failed
- 77 - disc accepted

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