

## **Activation of Licensing Mechanisms**

### **- No Device License Keys**

Activating license keys for system software can be a bit of a burden. Fortunately, the Electronic Device Description Language (EDDL) technology was designed to support devices without the need to activate license keys for each one. This makes commissioning devices much easier.

### **License Activation Challenge**

A system must support devices of many types, from several manufacturers, using different protocols. It must be possible to commission new devices without undue effort or hidden cost.

### **Driver Program Problem**

Some device management software use driver programs similar to the Microsoft Windows printer driver concept. When new device types arrive in the plant, a driver program for the device is installed to support it. Dealing with the driver software license can be a challenge for the person who has to commission some new devices. Not every device needs a license, but some do. At driver software installation the user will have to read a unique license code from the computer, send it to the device manufacturer together with the purchase order number, wait for a unique license key to come back from the device manufacturer, and then enter that license key on the computer. These license keys must also be kept safely to be available if the driver programs have to be reinstalled. If many of the device driver programs need a license key, this can become a burden for the system administrator.

Managing the driver software license keys is time consuming; and must be repeated at each maintenance station.

# EDDL: The HTML of Process Control

## HTML

Web pages use Hyper Text Markup Language (HTML) which is a text file that describes the user interface as plain text. The beautiful user interface graphics is then rendered by the web browser. That is, an HTML file is a document, not software. The HTML pages are not licensed. Therefore the user does not have to activate license keys when visiting web pages. HTML being a text document rather than software is key to the success of the World Wide Web (WWW) because there is no need to activate license keys for different sites.

Table 1 Examples of HTML tags and attributes (keywords)

Tag	Attribute	Value
Head	Value	Submit
Title	Selected	Button
Body	Border	Checkbox
BR	Type	
B	Value	
Select	SRC	
Option	Href	
Table		
TR		
TD		
Input		
Img		
A		

Web pages sometimes use JavaScript to validate user input and dynamically make text and images etc. visible or invisible depending on prior selections etc. The script is interpreted, so there is no license key activation.

```

1  <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01
2  Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
3  <html _ngapp="eddl" class="no_js">
4  <head><meta name="GENERATOR" content="Microsoft SharePoint" /><meta http-equiv="Content-Type"
5  content="text/html; charset=utf-8" /><meta http-equiv="Expires" content="0" /><META
6  NAME="ROBOTS" CONTENT="NOINDEX" /><title>
7
8  ELECTRONIC DEVICE DESCRIPTION LANGUAGE
9  </title><link rel="stylesheet" type="text/css" href="/style%20library/en-US/Coze%
10  20style/bscd.css"/>
11 <link rel="stylesheet" type="text/css" href="/style%20library/en-US/Coze%
12  20style/control.css"/>
13 <link rel="stylesheet" type="text/css" href="/style%20library/en-US/Coze%
14  20style/pageLayout.css"/>
15 <link rel="stylesheet" type="text/css" href="/style%20library/esl_blue.css"/>
16 <link rel="stylesheet" type="text/css" href="/_layouts/1033/style/Coze.css?
17  r=msgrms02NH123vna1AN3Dk3D"/>
18
19 <!--Styles used for positioning, font and spacing definitions-->
20 <script src="/_layouts/1033/init.js?rev=6a6c2e779009c1c10e410330" /></script>
21 <script type="text/javascript" language="javascript" src="/_layouts/1033/Coze.js?
22  rev=ff020a44ef092b9585b31343D" defer></script>
23 <script type="text/javascript" language="javascript" src="/_layouts/1033/ies5up.js?rev=6174
24  3F12V42fc009XV80AA3Dk3D" /></script>
25 <script type="text/javascript" language="javascript" src="/_layouts/1033/search.js?rev=983jprg
26  4F013030749f00a4320" defer></script>
27
28 <!--Placeholder for additional overrides-->
29
30 </html>
    
```

Figure 1 Plain HTML text will generate a beautiful, easy to use, graphical web page



Figure 2 Beautiful, easy to use, graphical web page generated from plain HTML text

The person that surfs the web need not understand the HTML-file language. It just works.

## EDDL

An EDDL file is a compressed text document, not executable software, just like an HTML file, and EDDL-based device management software works like a web browser, providing access to information without requiring add-on programs. An EDDL file describes the user interface content & structure the device manufacturer wants for the device. When a new device type or version arrives in the plant, the EDDL file for the device is simply copied onto the system. The intelligent device management software renders the graphics for configuration/setup, calibration, and diagnostics pages.

**Table 2 Examples of EDDL tags and attributes (keywords)**

Device Definition	Business Logic	User Interface Description	Attribute
BLOCK VARIABLE	METHOD IF SELECT * / + - FILE	MENU WAVEFORM CHART GAUGE GRAPH GRID	LABEL HELP CLASS HANDLING TYPE VALIDITY

User guidance wizards (EDDL methods) are created by the device manufacturer using a JavaScript-like language part of the EDDL standard. Wizards are interpreted by the device management software.

```
VARIABLE pressureValue
{
  LABEL [pressure_value];
  HELP [digital_value_pressure_help];
  CLASS CORRECTION & DYNAMIC;
  HANDLING READ;
  TYPE FLOAT
  {
    DISPLAY_FORMAT "%.3f";
  }
}

VARIABLE pressureUnits
{
  LABEL [pressure_value_unit];
  HELP [digital_units_pressure_help];
  HANDLING READ & WRITE;
  TYPE ENUMERATED (2)
  {
    // These 16-bit enumerations may be found in Common Tables, Table 2.65 (0x41)
    ( 0x4101, [InH2O], [inches_of_water_68_degrees_F_help] ),
    ( 0x4102, [InHg], [inches_of_mercury_0_degrees_C_help] ),
    ( 0x4103, [FtH2O], [feet_of_water_68_degrees_F_help] ),
    ( 0x4104, [mmH2O], [millimeters_of_water_68_degrees_F_help] )
  }
}
```

**Figure 3 Plain EDDL text will generate a beautiful, easy to use, graphical device page**



**Figure 4 Graphical device page generated from plain text EDDL**

The person that 'surfs' the devices need not understand the EDDL-file language. It just works.

Only a single one-time license is required for the system itself. Since EDDL files are compressed text documents, not executable software, there is no license key required to unlock the capabilities of the EDDL files for each device. This makes systems based on EDDL very much less troublesome to manage since the whole process of submitting license code with PO number, as well as safe keeping and entering license keys, potentially for many types of devices on many computers, is eliminated.

## Ease of Use

EDDL is the only device integration technology that works like web browsers. Other device integration technologies cannot achieve comparable results.

Software based purely on EDDL avoids the many problems associated with driver programs. This makes systems based purely on EDDL easier to support.

Enhanced EDDL works just like traditional DD before it. Therefore upgrading a system to EDDL does not require change of skills. Just copy and paste EDDL files like you copy HART and Fieldbus files today, no license key administration required.

## References

EDDL Brochure and Technical Description on [www.eddl.org](http://www.eddl.org) site

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