JKI state machine

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什麼是 JKI state machine?

JKI 公司寫好的一包 state machine 架構

無腦好用的帶有一些 queue 特性的
string base state machine

http://sine.ni.com/nips/cds/view/p/lang/zht/nid/209025

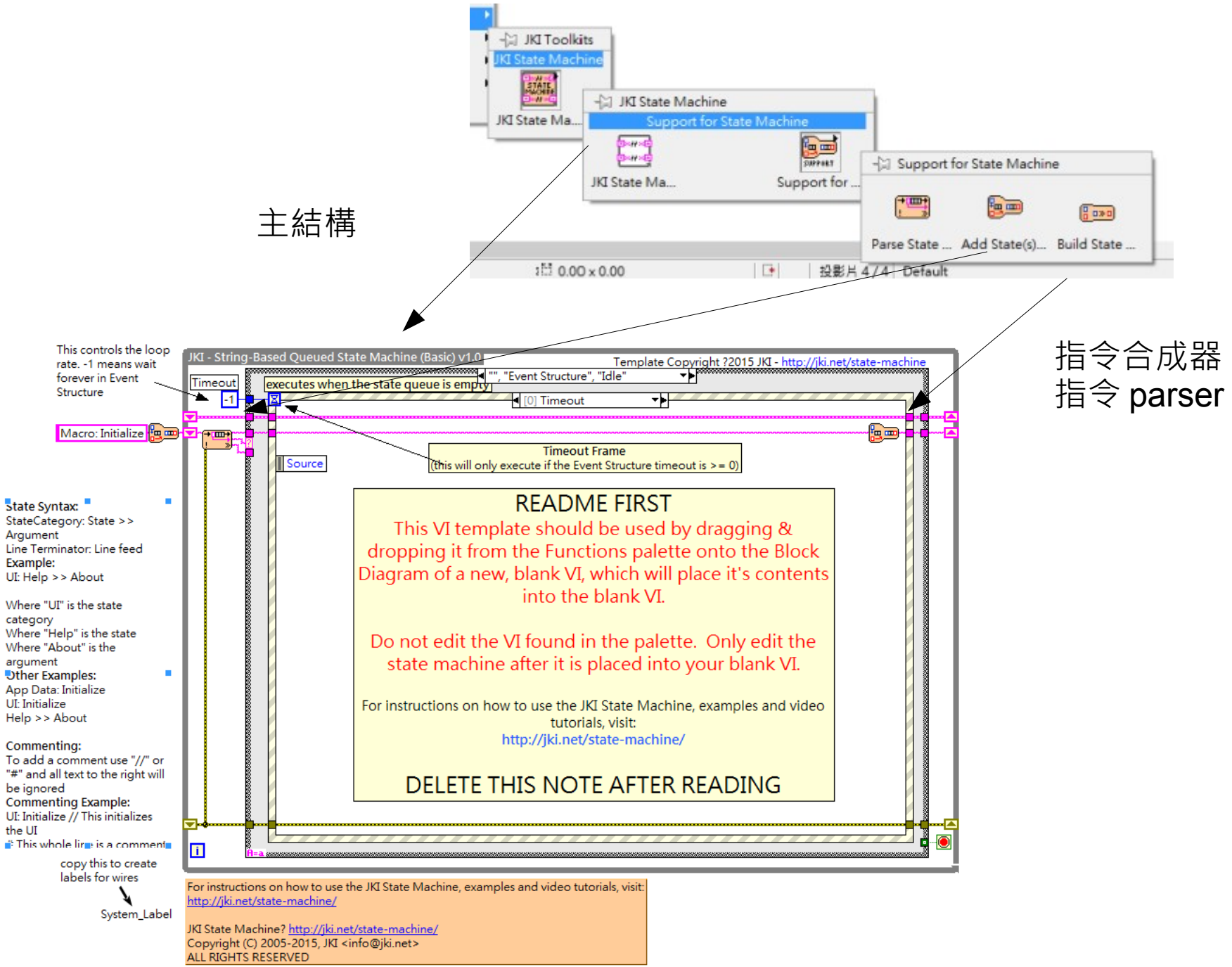
為何使用 JKI state machine?

易學易用，好改但不見得容易維護

→ 適合用來進行 10-20hr 的 prototype 實作
有 state machine 特色的測試程序或者機台設備控制

→ 非同步執行用的少的狀態下用 JKI 寫非常快 ,state 分割的好甚至可以所有程式碼塞在 main VI 等 demo 功能測完再慢慢打包

→ 真的要說缺點大概就是 Emergency Stop 不太好加，很容易破壞到原本的 Error Handler，不過實際開發有安全性考量的儀控多半會搭配 PLC 或單晶片去做 Real-time 的保護機制所以也不用擔心 .


JKI Toolkits
JKI State Machine
JKI State Ma...
JKI State Machine
Support for State Machine
JKI State Ma...
Support for ...
Support for State Machine
Parse State ...
Add State(s)...
Build State ...
0.00 x 0.00
投影片 4 / 4 - Default
主結構
指令合成器
指令 parser
This controls the loop rate. -1 means wait forever in Event Structure
JKI - String-Based Queued State Machine (Basic) v1.0
Template Copyright ?2015 JKI - http://jki.net/state-machine
Timeout
-1
executes when the state queue is empty
"", "Event Structure", "Idle"
[0] Timeout
Macro: Initialize
Source
Timeout Frame
(this will only execute if the Event Structure timeout is >= 0)
README FIRST
This VI template should be used by dragging & dropping it from the Functions palette onto the Block Diagram of a new, blank VI, which will place it's contents into the blank VI.
Do not edit the VI found in the palette. Only edit the state machine after it is placed into your blank VI.
For instructions on how to use the JKI State Machine, examples and video tutorials, visit:
http://jki.net/state-machine/
DELETE THIS NOTE AFTER READING
State Syntax:
StateCategory: State >> Argument
Line Terminator: Line feed
Example:
UI: Help >> About
Where "UI" is the state category
Where "Help" is the state
Where "About" is the argument
Other Examples:
App Data: Initialize
UI: Initialize
Help >> About
Commenting:
To add a comment use "//" or "#" and all text to the right will be ignored
Commenting Example:
UI: Initialize // This initializes the UI
This whole line is a comment
copy this to create labels for wires
System_Label
For instructions on how to use the JKI State Machine, examples and video tutorials, visit:
http://jki.net/state-machine/
JKI State Machine? http://jki.net/state-machine/
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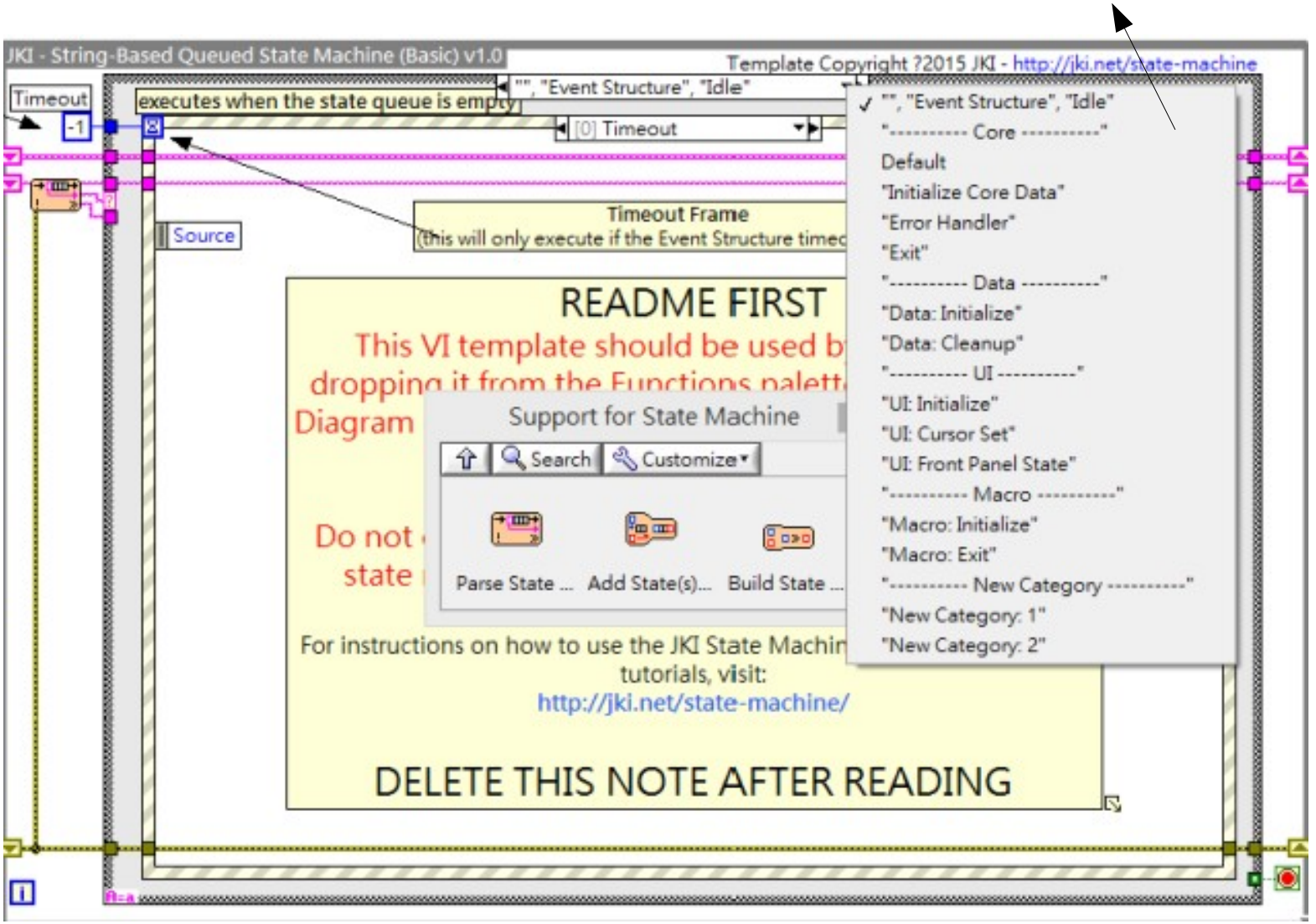
ALL RIGHTS RESERVED

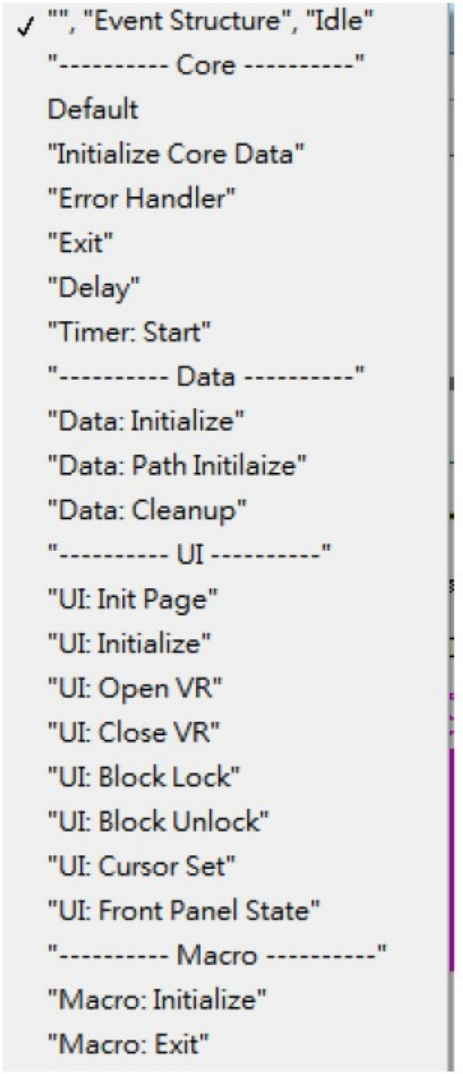
預設的 state , idle 的 event structure 處理人機觸發

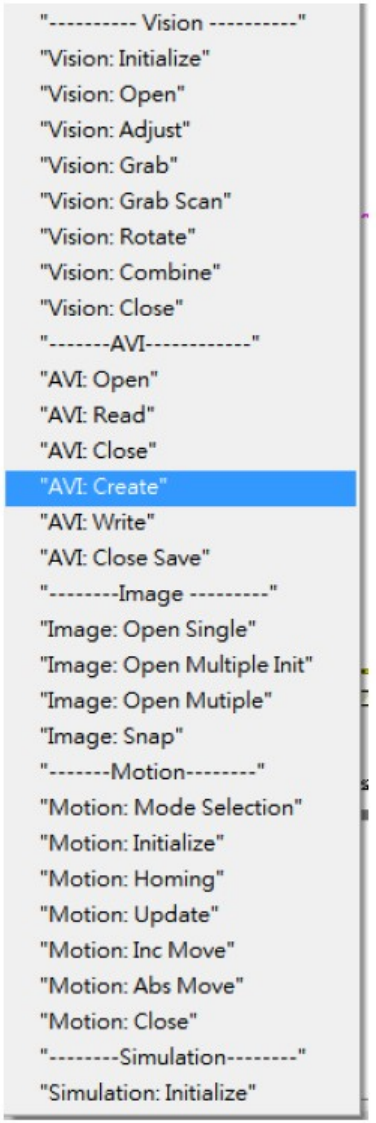


States

所有 state 大概就這些每一項大概都包成個別的子 VI 放在 API 的資料夾底下 .

原則上 state 相關的 VI 都放在主類別命名的資料夾底下 , 比如 UI, Vision, Image, AVI 之類的

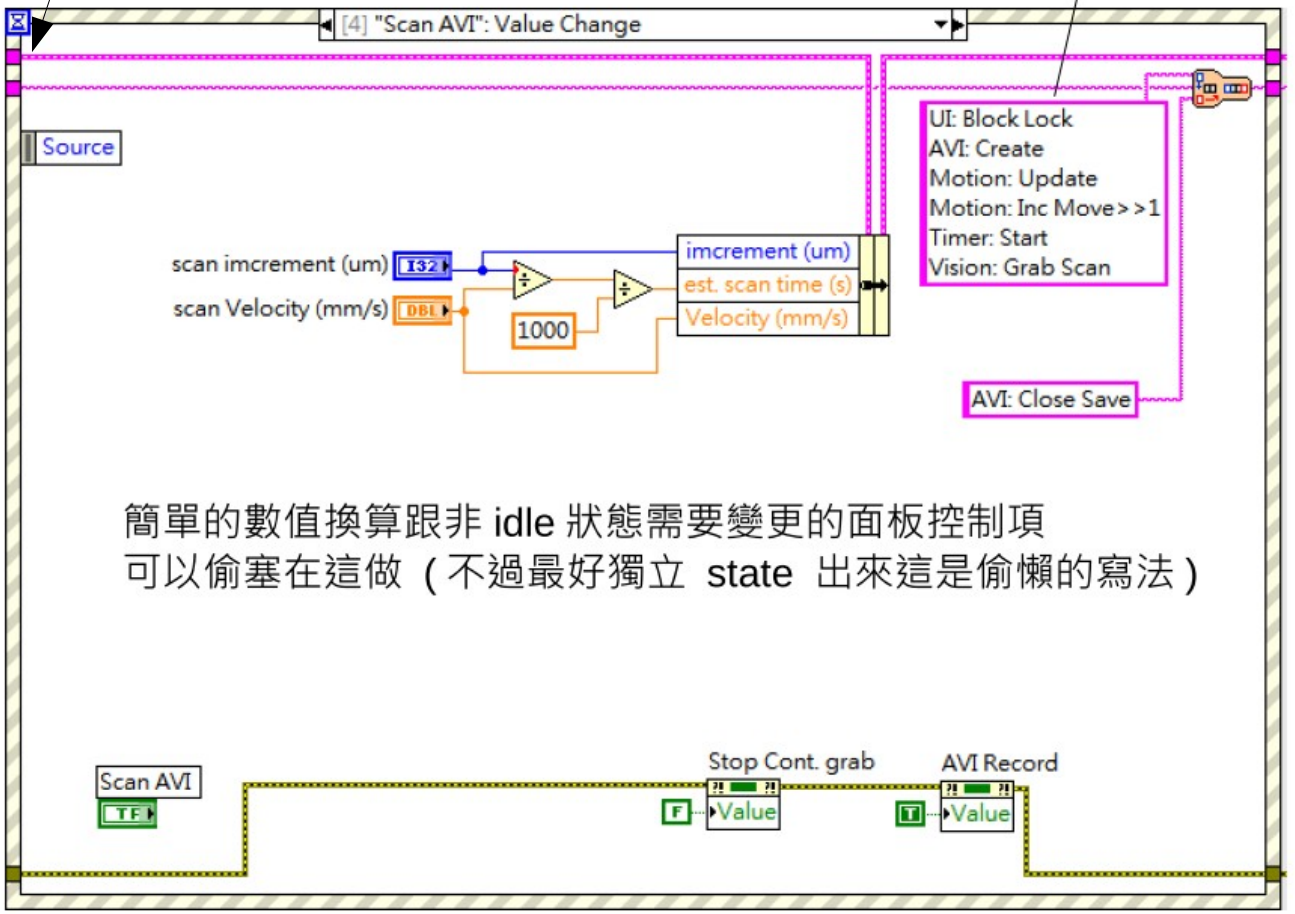




UI loop

資料藏在 shift reg. 原則上可以做 typdef. 或 DVR

JKI 送 command batch
很方便 , string-base 所以
判讀與擴充性很好



Data Initialize

這次做的東西剛好參數不多就直接用預設的偷懶法塞 Shift Register, 參數再多一點就必須建 typedef 再配合 DVR 比較好