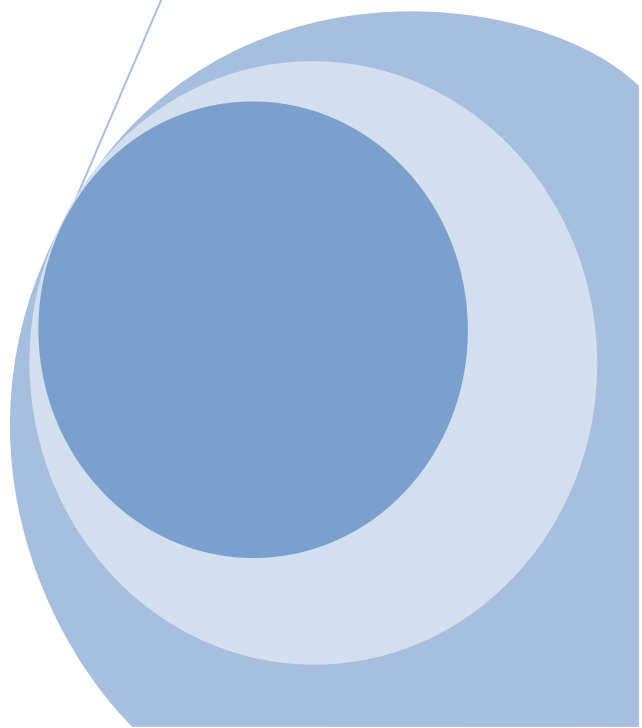
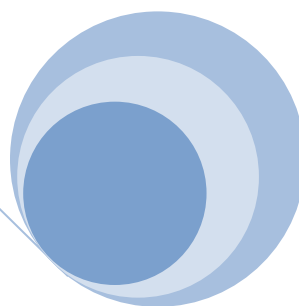
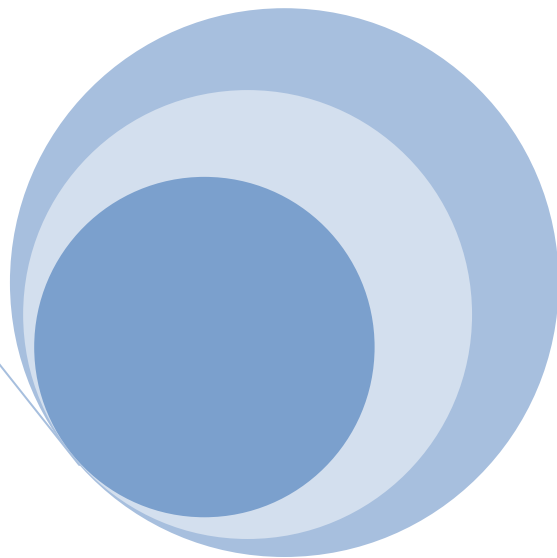


**TSParser**



# **TSParser (MPEG2 Analyzer) Version 1.0.1**

## **Manual**

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## 1. Introduction

First of all, we would like to thank you for choosing the TSP (MPEG2 Analyzer). This manual contains an introduction to most of the features supported by the analyzer.

### 1.1. Run

TSP is a web base application use jetty container.

%INSTALL\_DIR%/startup.bat

Supported explore: Chrome IE Firefox

Chrome is recommended.

Href: <http://xxx.xxx.xxx.xxx:8080/TSP>

The default port is 8080.

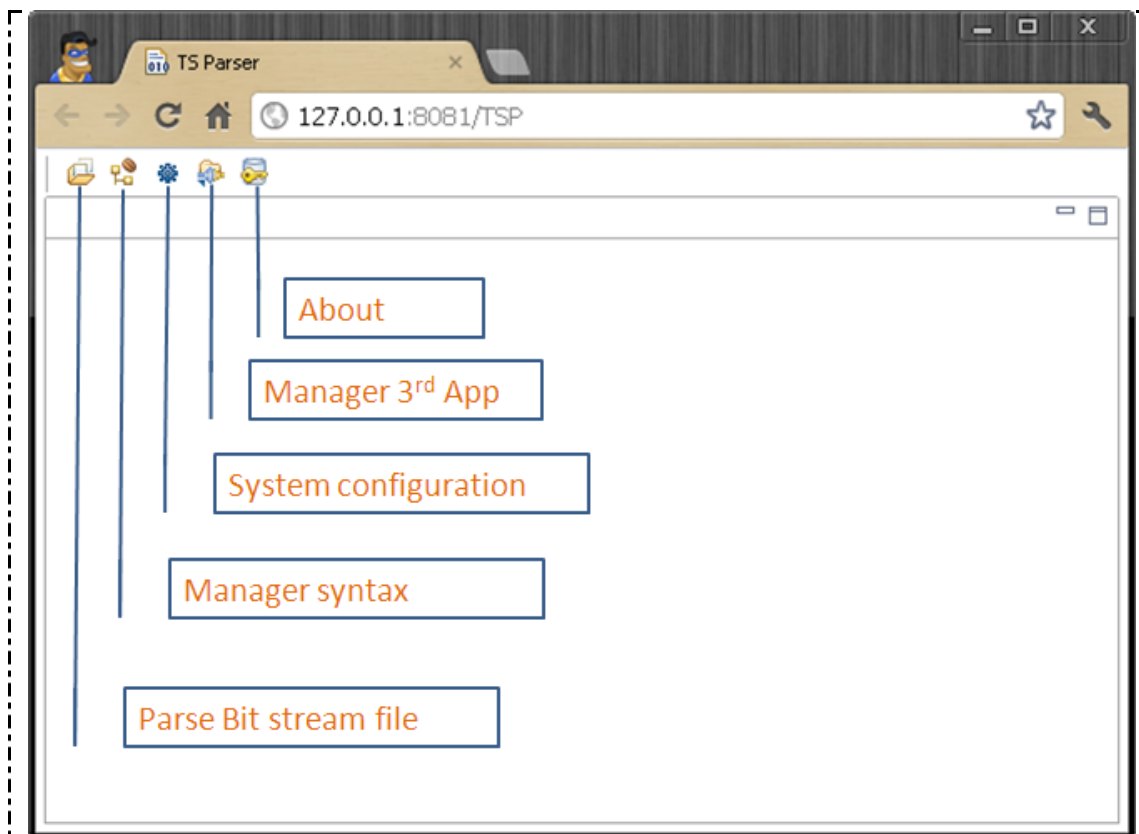
```
D:\share\TSP>.\\jre6\bin\java.exe -jar jetty-runner-7.0.0.v20091005.jar --port 80
80 TSP.war
2014-03-26 13:57:00.739:INFO::Logging to StdErrLog::DEBUG=false via org.eclipse.
jetty.util.log.StdErrLog
2014-03-26 13:57:00.739:INFO::Runner
2014-03-26 13:57:00.739:WARN::No tx manager found
2014-03-26 13:57:01.067:INFO::Deploying file:/D:/share/TSP/TSP.war @ /
[WebAppContext@d8483@7d8483/, null, file:/D:/share/TSP/TSP.war]
2014-03-26 13:57:01.114:INFO::jetty-7.0.0.v20091005
2014-03-26 13:57:02.364:INFO::Extract jar:file:/D:/share/TSP/TSP.war!/ to D:\cyg
win\tmp\Jetty_0_0_0_8080_TSP.war_9p7jdy\webapp
2014-03-26 13:57:13.488:INFO::No Transaction manager found - if your webapp requires one, please configure one.
com.flylb.rap Current Directory:D:\share\TSP\
osgi> 2014-03-26 13:57:18.129:INFO::Started SelectChannelConnector@0.0.0.0:8080
```

### 1.2. Transport stream files

The analyzer allows you to read and decode files which are stored on the file system of your computer. To read a file, you can enter a valid filename with full path.

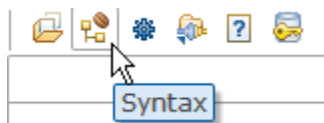
### 1.3. Main Window

Using Browser access <http://IP:8080/TSP>.

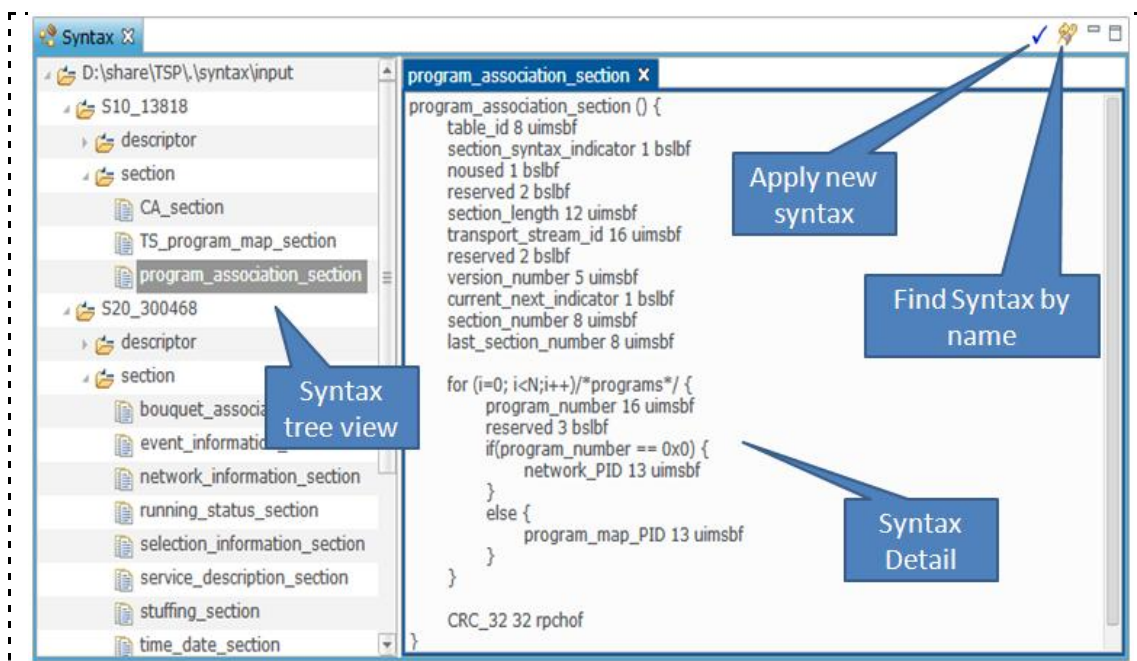


## 2. Core features

### 2.1. Syntax management



Open syntax manager window



TSP use Section/Descriptor syntax to parse Section/Descriptor.

TSP has the ability to modify the Section & Descriptor syntax at runtime.

Change the syntax makes analysis results at the same time change.

Syntax file locate: %INSTALL\_DIR%\syntax, User can modify these syntax files outside system.

### 2.1.1. Section syntax sample

For EIT

```
event_information_section(){
    table_id 8 uimbsf
    section_syntax_indicator 1 bslbf
    reserved_future_use 1 bslbf
    reserved 2 bslbf
    section_length 12 uimbsf
    service_id 16 uimbsf
    reserved 2 bslbf
    version_number 5 uimbsf
    current_next_indicator 1 bslbf
    section_number 8 uimbsf
    last_section_number 8 uimbsf
    transport_stream_id 16 uimbsf
    original_network_id 16 uimbsf
    segment_last_section_number 8 uimbsf
    last_table_id 8 uimbsf
    for(i=0;i<N;i++)/*events*/{
```

```

event_id 16 uimbsf
start_time 40 bslbf
duration 24 uimbsf
running_status 3 uimbsf
free_CA_mode 1 bslbf
descriptors_loop_length 12 uimbsf
for(i=0;i<N;i++){
    descriptor()
}
}
CRC_32 32 rpchof
}

```

Text marked in red is for “For Loop”, the result tree use this text to create a tree node. The format is /\*xxxxs\*/

Some syntax cannot be changed.

e.g.

```

program_association_section () {
    ...
    for (i=0; i<N;i++)/*programs*/ {
        program_number 16 uimbsf
        reserved 3 bslbf
        if(program_number == 0x0) {
            network_PID 13 uimbsf
        }
        else {
            program_map_PID 13 uimbsf
        }
    }
    ...
}

```

System using programs->program\_map\_PID to find PMT

System using programs->network\_PID to find NIT.

Please do not change these syntax.

### 2.1.2. Section result sample

```

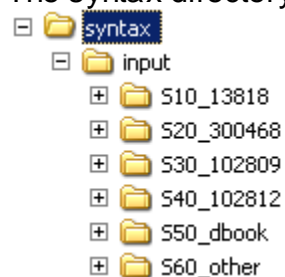
TID = 80[0x50] Ext = 2304[0x900] Ver = 0 Sec_no = 0/16
  table_id = 80 [0x50]
  section_syntax_indicator = 1 [0x1]
  reserved_future_use = 1 [0x1]
  reserved = 3 [0x3]
  section_length = 276 [0x114]
  service_id = 2304 [0x900]
  reserved = 3 [0x3]
  version_number = 0 [0x0]
  current_next_indicator = 1 [0x1]
  section_number = 0 [0x0]
  last_section_number = 16 [0x10]
  transport_stream_id = 1 [0x1]
  original_network_id = 8770 [0x2242]
  segment_last_section_number = 0 [0x0]
  last_table_id = 80 [0x50]
  events
    event event_id = 12288 [0x3000]
    event event_id = 12289 [0x3001]
    event event_id = 12290 [0x3002]
    event event_id = 12291 [0x3003]
  CRC_32 = 3236578476 [0xc0ea44ac]

```

### 2.1.3. Add new Section/Descriptor

User can add new Section/Descriptor syntax to system.

The syntax directory:



The prefix Sx0\_ is for sort used.

The new Section syntax should be registered, see [2.2.2 Configure Table ID](#)

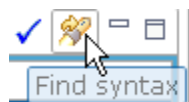
The new Descriptor syntax should assign a tag **at first line**,



Sample for short\_event\_descriptor:

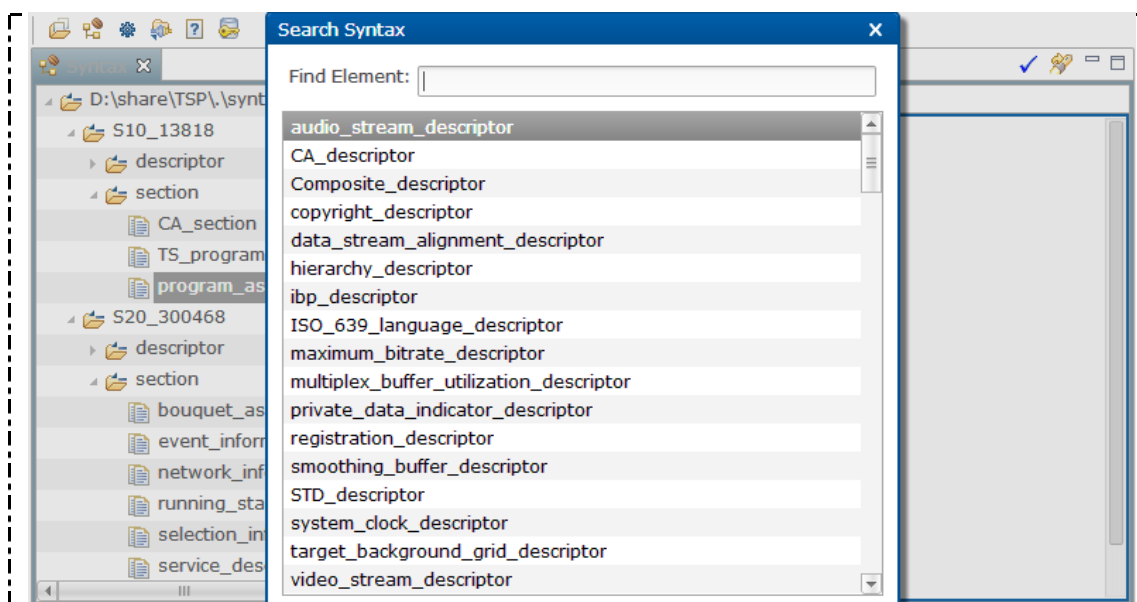
<pre> short_event_descriptor x tag=0x4d short_event_descriptor(){     descriptor_tag 8 uimbsf     descriptor_length 8 uimbsf     ISO_639_language_code 24 bslbf     event_name_length 8 uimbsf     for (i=0;i&lt;event_name_length;i++){         event_name_char 8 uimbsf     }     text_length 8 uimbsf     for (i=0;i&lt;text_length;i++){         text_char 8 uimbsf     } } </pre>	<pre> short_event_descriptor descriptor_tag = 77 [0x4d]     descriptor_tag = 77 [0x4d]     descriptor_length = 15 [0xf]     ISO_639_language_code = 6514793 [0x636869]     event_name_length = 9 [0x9]     event_name_char = 整点快报     text_length = 1 [0x1]     text_char = </pre>
--	--

#### 2.1.4. Search syntax



Click button “find syntax” will pop dialog “search Syntax”

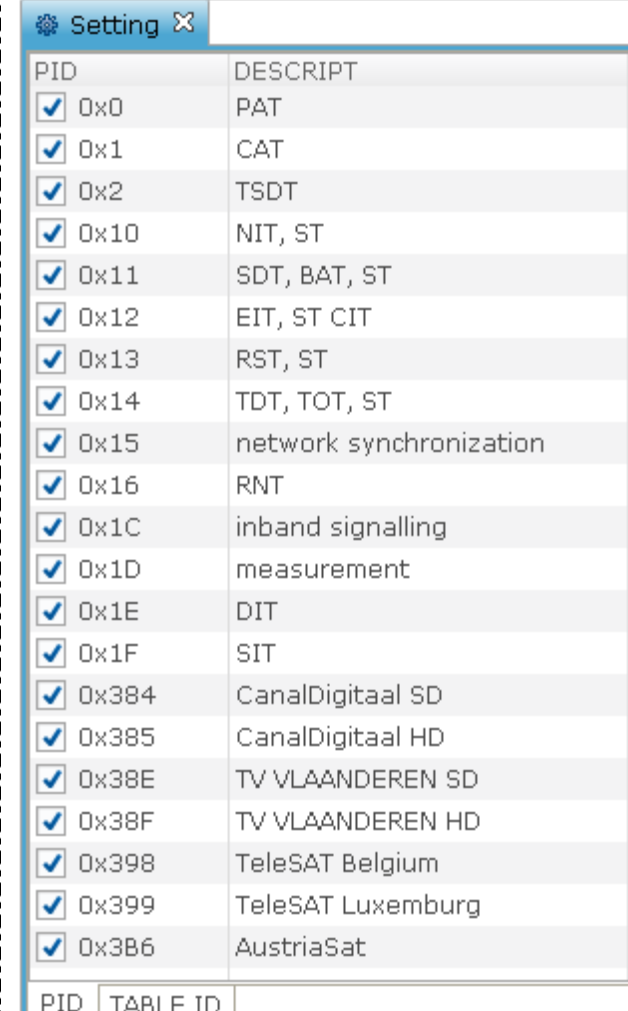
Enter key word for match syntax, double click to open it.



## 2.2. System setting



### 2.2.1. Configure PID filter



PID	DESCRIPT
<input checked="" type="checkbox"/> 0x0	PAT
<input checked="" type="checkbox"/> 0x1	CAT
<input checked="" type="checkbox"/> 0x2	TSMT
<input checked="" type="checkbox"/> 0x10	NIT, ST
<input checked="" type="checkbox"/> 0x11	SDT, BAT, ST
<input checked="" type="checkbox"/> 0x12	EIT, ST CIT
<input checked="" type="checkbox"/> 0x13	RST, ST
<input checked="" type="checkbox"/> 0x14	TDT, TOT, ST
<input checked="" type="checkbox"/> 0x15	network synchronization
<input checked="" type="checkbox"/> 0x16	RNT
<input checked="" type="checkbox"/> 0x1C	inband signalling
<input checked="" type="checkbox"/> 0x1D	measurement
<input checked="" type="checkbox"/> 0x1E	DIT
<input checked="" type="checkbox"/> 0x1F	SIT
<input checked="" type="checkbox"/> 0x384	CanalDigitaal SD
<input checked="" type="checkbox"/> 0x385	CanalDigitaal HD
<input checked="" type="checkbox"/> 0x38E	TV VLAANDEREN SD
<input checked="" type="checkbox"/> 0x38F	TV VLAANDEREN HD
<input checked="" type="checkbox"/> 0x398	TeleSAT Belgium
<input checked="" type="checkbox"/> 0x399	TeleSAT Luxemburg
<input checked="" type="checkbox"/> 0x3B6	AustriaSat

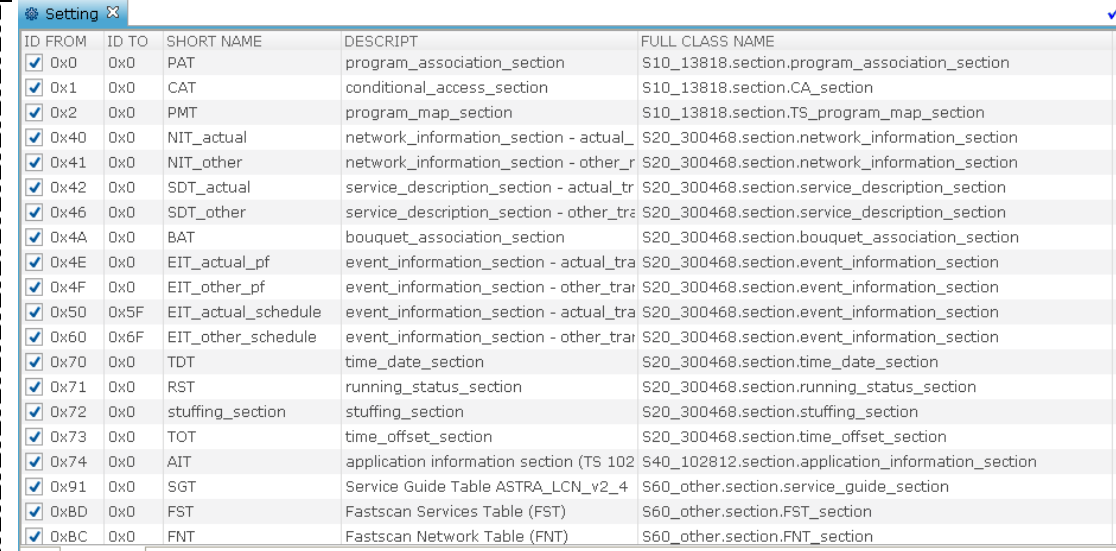
PID    TABLE ID

User cans custom PID filter for runtime used.

PMT filter will be disabled if PAT is disabled.

Decrease filter will cause parser faster.

### 2.2.2. Configure Table ID



ID FROM	ID TO	SHORT NAME	DESCRIPT	FULL CLASS NAME
<input checked="" type="checkbox"/> 0x0	0x0	PAT	program_association_section	S10_13818.section.program_association_section
<input checked="" type="checkbox"/> 0x1	0x0	CAT	conditional_access_section	S10_13818.section.CA_section
<input checked="" type="checkbox"/> 0x2	0x0	PMT	program_map_section	S10_13818.section.TS_program_map_section
<input checked="" type="checkbox"/> 0x40	0x0	NIT_actual	network_information_section - actual	S20_300468.section.network_information_section
<input checked="" type="checkbox"/> 0x41	0x0	NIT_other	network_information_section - other	S20_300468.section.network_information_section
<input checked="" type="checkbox"/> 0x42	0x0	SDT_actual	service_description_section - actual	S20_300468.section.service_description_section
<input checked="" type="checkbox"/> 0x46	0x0	SDT_other	service_description_section - other	S20_300468.section.service_description_section
<input checked="" type="checkbox"/> 0x4A	0x0	BAT	bouquet_association_section	S20_300468.section.bouquet_association_section
<input checked="" type="checkbox"/> 0x4E	0x0	EIT_actual_pf	event_information_section - actual	S20_300468.section.event_information_section
<input checked="" type="checkbox"/> 0x4F	0x0	EIT_other_pf	event_information_section - other	S20_300468.section.event_information_section
<input checked="" type="checkbox"/> 0x50	0x5F	EIT_actual_schedule	event_information_section - actual	S20_300468.section.event_information_section
<input checked="" type="checkbox"/> 0x60	0x6F	EIT_other_schedule	event_information_section - other	S20_300468.section.event_information_section
<input checked="" type="checkbox"/> 0x70	0x0	TDT	time_date_section	S20_300468.section.time_date_section
<input checked="" type="checkbox"/> 0x71	0x0	RST	running_status_section	S20_300468.section.running_status_section
<input checked="" type="checkbox"/> 0x72	0x0	stuffing_section	stuffing_section	S20_300468.section.stuffing_section
<input checked="" type="checkbox"/> 0x73	0x0	TOT	time_offset_section	S20_300468.section.time_offset_section
<input checked="" type="checkbox"/> 0x74	0x0	AIT	application information section (TS 102)	S40_102812.section.application_information_section
<input checked="" type="checkbox"/> 0x91	0x0	SGT	Service Guide Table ASTRA_LCN_v2_4	S60_other.section.service_guide_section
<input checked="" type="checkbox"/> 0xBD	0x0	FST	Fastscan Services Table (FST)	S60_other.section.FST_section
<input checked="" type="checkbox"/> 0xBC	0x0	FNT	Fastscan Network Table (FNT)	S60_other.section.FNT_section

PID    TABLE ID

✓

ID\_FROM: The start table id of Section.

ID\_TO: The end table id of Section, for fixed table id marks this value with 0.

(E.g. For example: EIT table id: 0x4E 0x4F 0x50-0x5F 0x60-0x6F)

SHORT\_NAME will be shown as a tree root node.



FULL\_CLASS\_NAME:

Connect syntax to a special Table ID.

Like java package. class name.

(E.g. PAT S10\_13818.section.program\_association\_section)

User can enabled/disable a special Table for parser used.

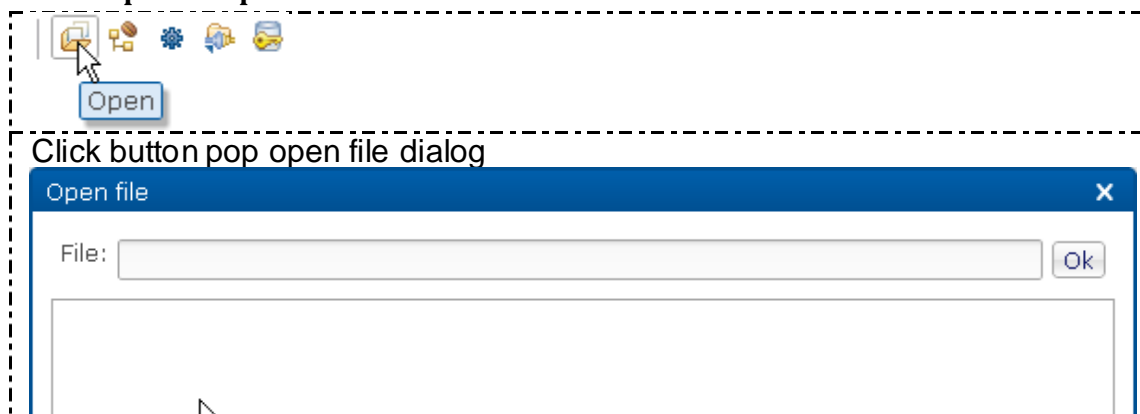
Click this button apply setting.



## 2.3. Parse bit stream file

TSP can analyze multiple files.

### 2.3.1. Open and parse file



Input full file name in edit box click OK.

The screenshot shows the TSParser application interface with the following components and callouts:

- File Name:** Points to the title bar showing the file path: `Bitstream:beijing_...MHz_multiservice_20110908.ts`.
- Section List:** Points to the left pane showing a list of sections under the **PMT [0x2]** table.
- Result tree:** Points to the top of the right pane, which displays the selected section's details.
- Text Result:** Points to the **Section** tab in the right pane, showing a textual representation of the section data.
- Section packet Raw data:** Points to the **Section Raw** tab in the right pane.
- Syntax:** Points to the **Syntax** tab in the right pane, showing the section's syntax fields.
- App Service list With SDT:** Points to the **ServiceList** tab at the bottom.
- App EPG With EIT:** Points to the **EPG** tab at the bottom.
- 3rd app created by user:** Points to the **App123** tab at the bottom.
- Time elapse view (PCR):** Points to the bottom status bar area.

This close-up view of the **Section** tab shows the following fields:

- TID = 2[0x2] Ext = 33[0x21] Ver = 4 Sec\_no = 0/0
- table\_id = 2 [0x2]
- section\_syntax\_indicator = 1 [0x1]
- noused = 0 [0x0]
- reserved = 3 [0x3]
- section\_length = 49 [0x31]
- program\_number = 33 [0x21]
- reserved = 3 [0x3]

The image displays three screenshots of the TSParser application, illustrating its functionality in parsing and displaying TS (Transport Stream) data.

**Top Screenshot: Tree View**

Tree	Section	Section Raw	Syntax
reserved		15 [0xf]	
program_info_length		0 [0x0]	
streams			
stream			
stream_type		4 [0x4]	
reserved		7 [0x7]	
elementary_PID		332 [0x14c]	
reserved		15 [0xf]	
ES_info_length		6 [0x6]	
descriptors			
ISO_639_language_descriptor			
descriptor_tag		10 [0xa]	
descriptor_length		4 [0x4]	

**Middle Screenshot: Section Information**

```

Section Information
-----
02 B0 31 00 21 C9 00 00 FF FF F0 00 04 E1 4C F0
06 0A 04 65 6E 67 00 0B E1 4B F0 0A 52 01 38 13
05 00 00 00 21 00 05 E1 4A F0 05 6F 03 00 02 E0
0E 57 9C FB
-----

Packet Information
Packet Header
-----
sync byte           (8b ) : 0x47
transport error indicator (1b) : 0x0
payload unit start indicator (1b) : 0x1
transport priority   (1b) : 0x0
packet identifier    (13b) : 0x14f
  
```

**Bottom Screenshot: Syntax Tree**

Tree	Section	Section Raw	Syntax
TS_program_map_section() {			
table_id	8	uimbf	
section_syntax_indicator	1	bslbf	
noused	1	bslbf	
reserved	2	bslbf	
section_length	12	uimbf	
program_number	16	uimbf	
reserved	2	bslbf	
version_number	5	uimbf	
current_next_indicator	1	bslbf	
section_number	8	uimbf	
last_section_number	8	uimbf	
reserved	3	bslbf	

### 2.3.2. Applications

User can write 3rd application in java, please using Java1.5 style

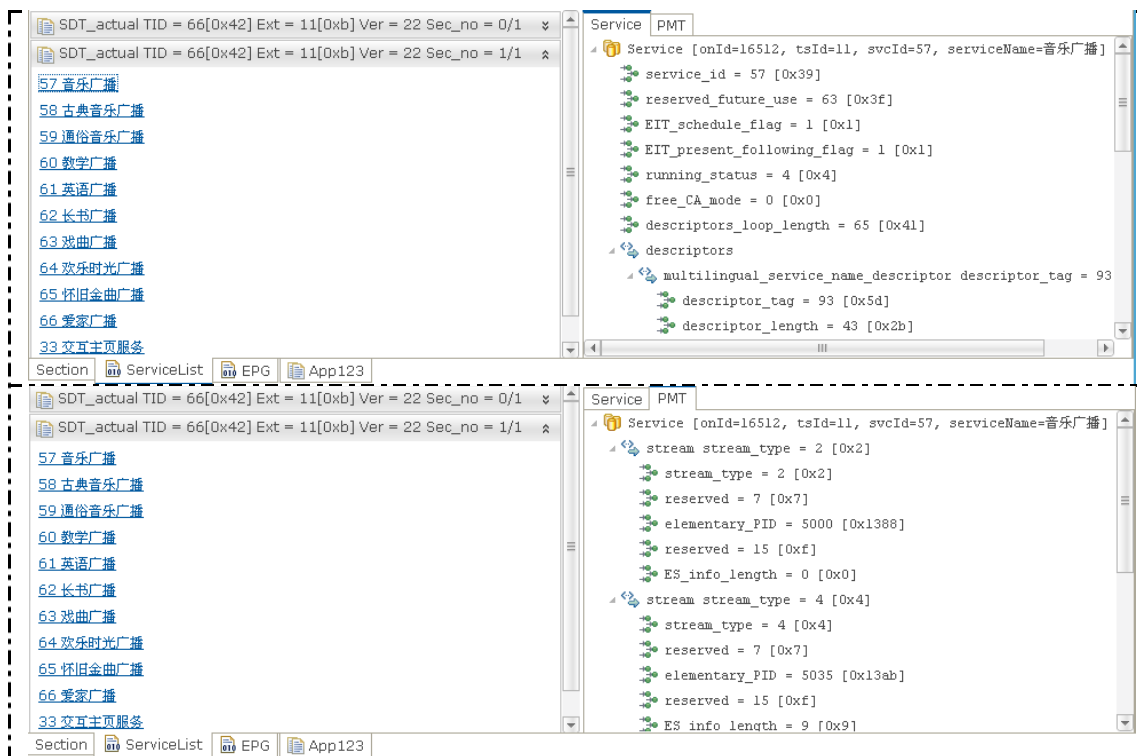
Application Locate: %INSTALL\_DIR%/3rd/src

When system startup, these application will be auto registered into system

There are 3 build in applications in system

#### 2.3.2.1. Service List application

Service List application, base on SDT

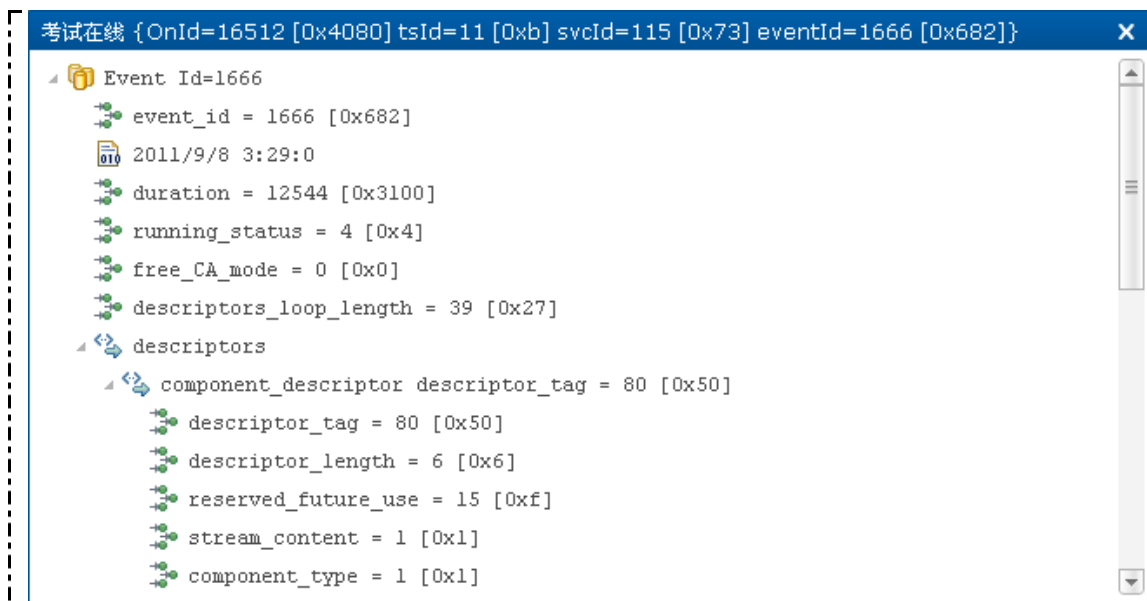


### 2.3.2.2. EPG application

EPG Application base on EIT.



Double click each event to show event detail information.



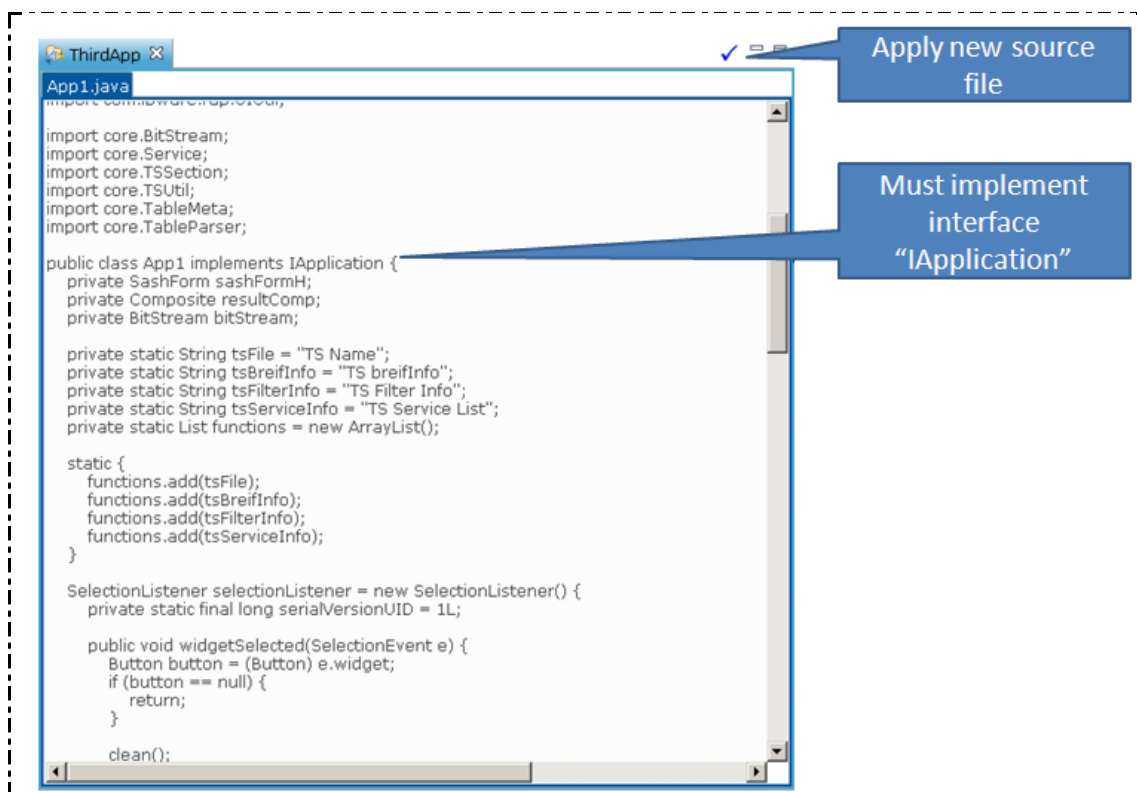
### 2.3.2.3. Demo Application

The Demo App shows some system information.

## 2.4. Third part application management.

3rd application locates in %INSTALL\_DIR%/3rd/src.

Application wrote by java language with 1.5 styles.





### 3. Contact & Support

For support, please contact us at [team.gcreate@gmail.com](mailto:team.gcreate@gmail.com)

<https://sites.google.com/site/tsparser/>

#### 3.1. Purchasing information

TODO