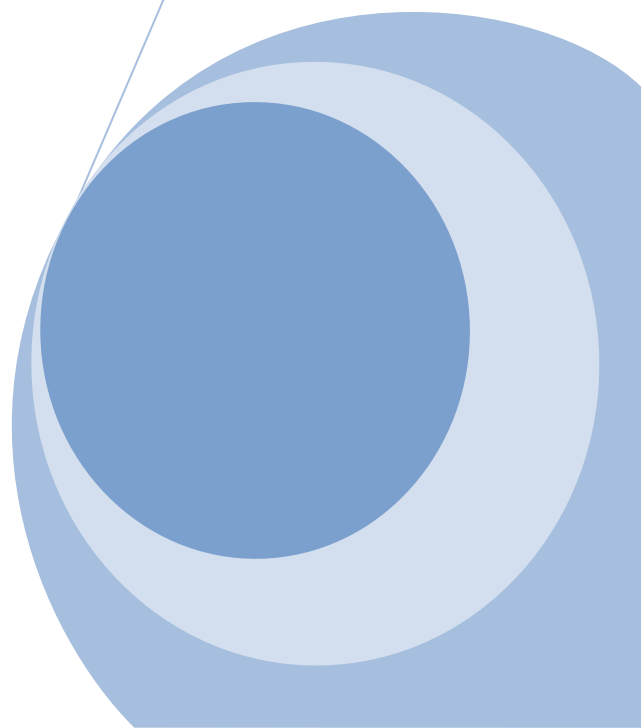
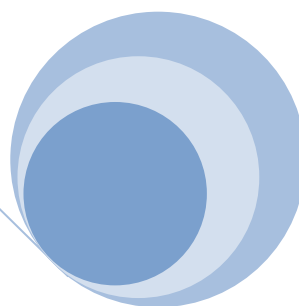
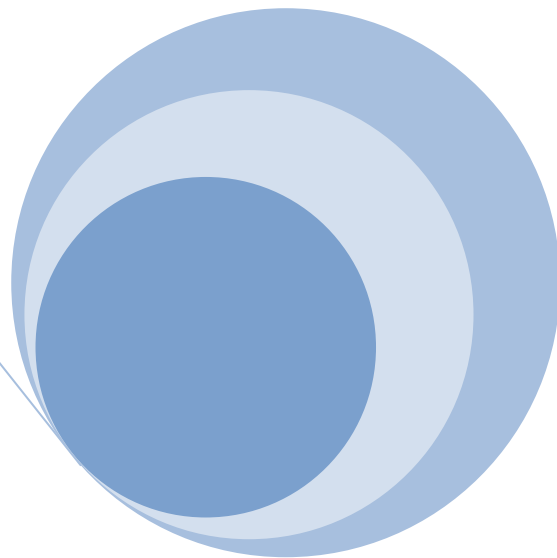


TSParser



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.

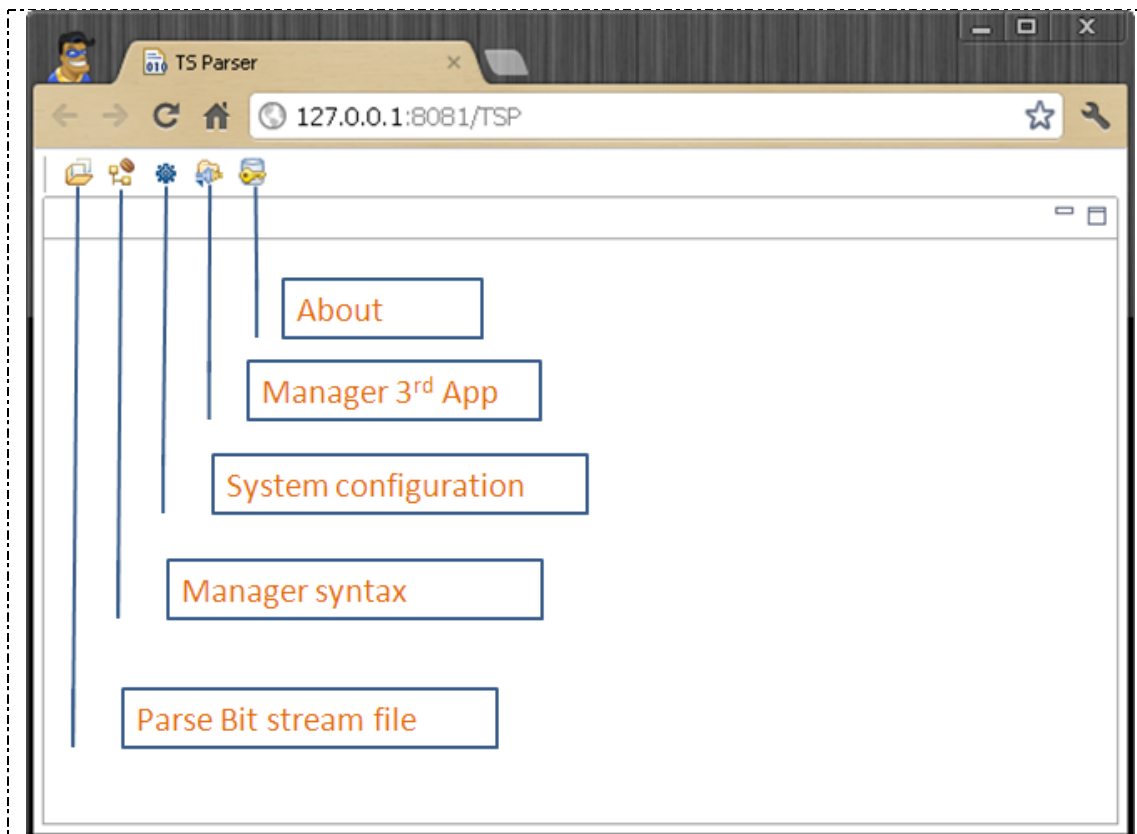
```
D:\share\TSP>. \jre6\bin\java.exe -jar jetty-runner-7.0.0.v20091005.jar --port 80
80 TSP.war
2014-03-26 13:57:00.739:INFO::Logging to StdErrLog::DEBUG=false via org.eclipse.
jetty.util.log.StdErrLog
2014-03-26 13:57:00.739:INFO::Runner
2014-03-26 13:57:00.739:WARN::No tx manager found
2014-03-26 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.

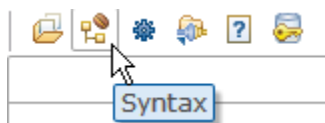
1.3. Main Window

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

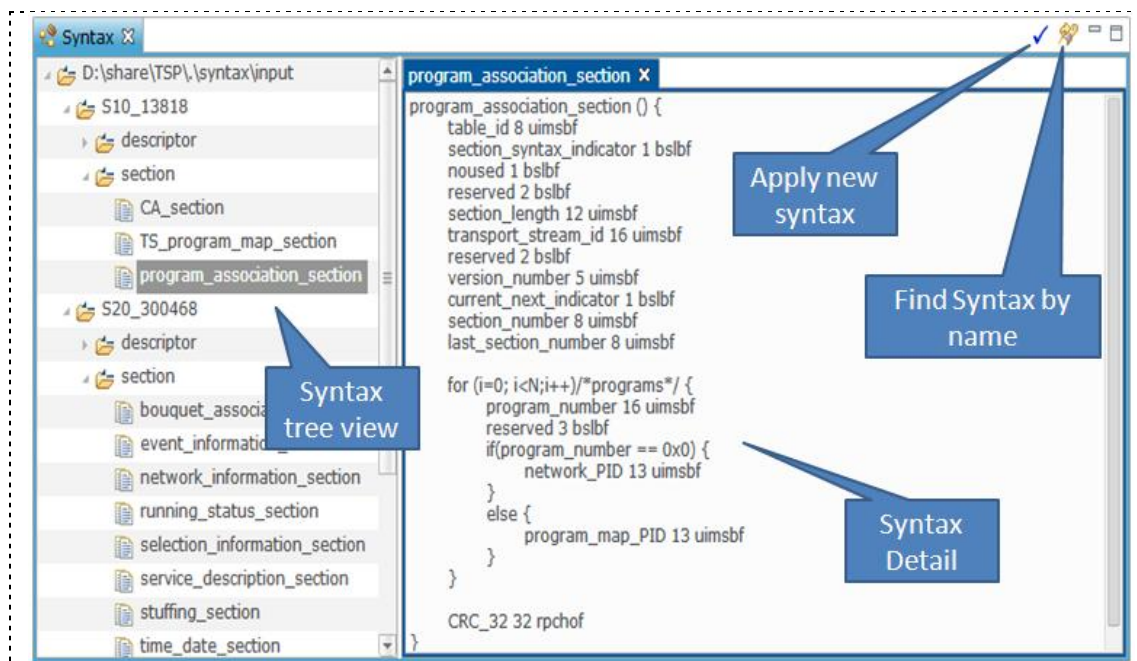


2. Core features

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:

```

syntax
  input
    S10_13818
    S20_300468
    S30_102809
    S40_102812
    S50_dbook
    S60_other

```

The prefix Sx0_ is for sort used.

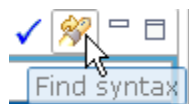
The new Section syntax should be registered, see [2.2.2 Configure Table ID](#)

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

Sample for short_event_descriptor:

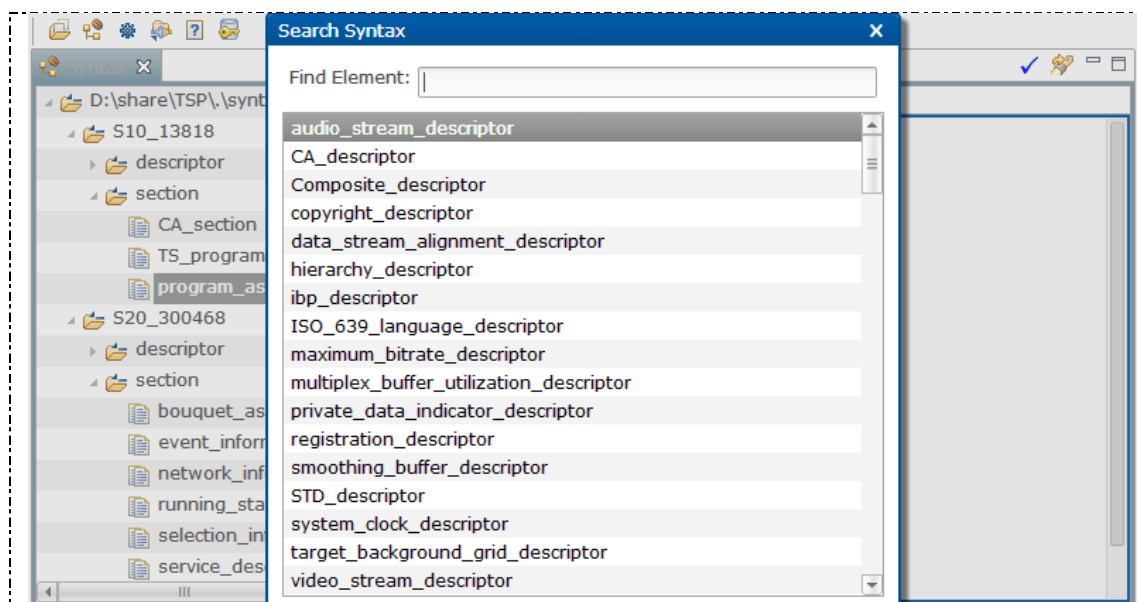
<pre> short_event_descriptor x tag=0x4d short_event_descriptor(){ descriptor_tag 8 uimsbf descriptor_length 8 uimsbf ISO_639_language_code 24 bslbf event_name_length 8 uimsbf for (i=0;i<event_name_length;i++){ event_name_char 8 uimsbf } text_length 8 uimsbf for (i=0;i<text_length;i++){ text_char 8 uimsbf } } </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”

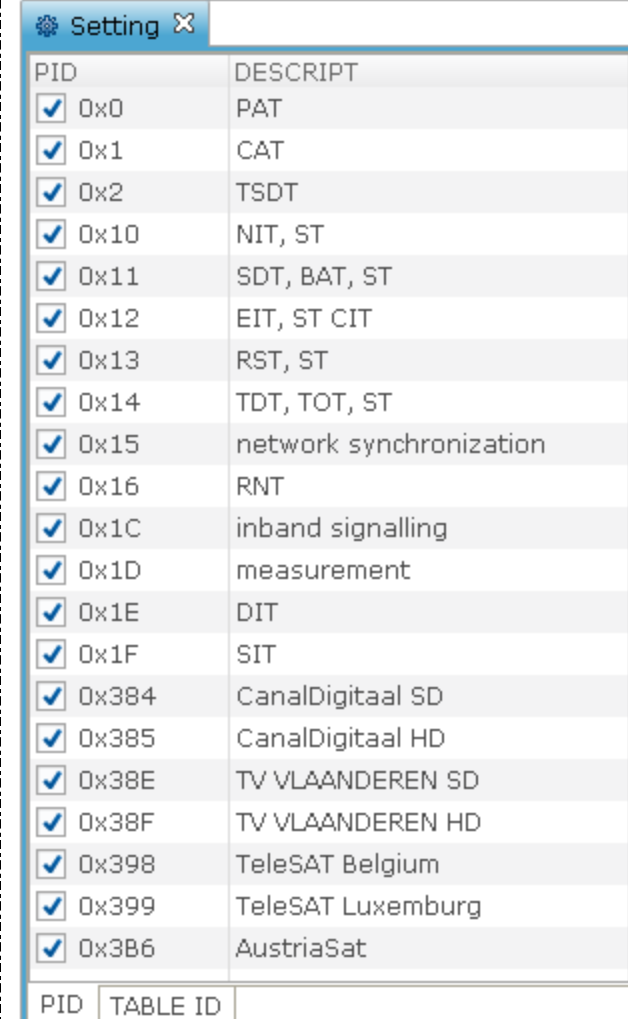
Enter key word for match syntax, double click to open it.



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

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

User cans custom PID filter for runtime used.

PMT filter will be disabled if PAT is disabled.

Decrease filter will cause parser faster.

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.

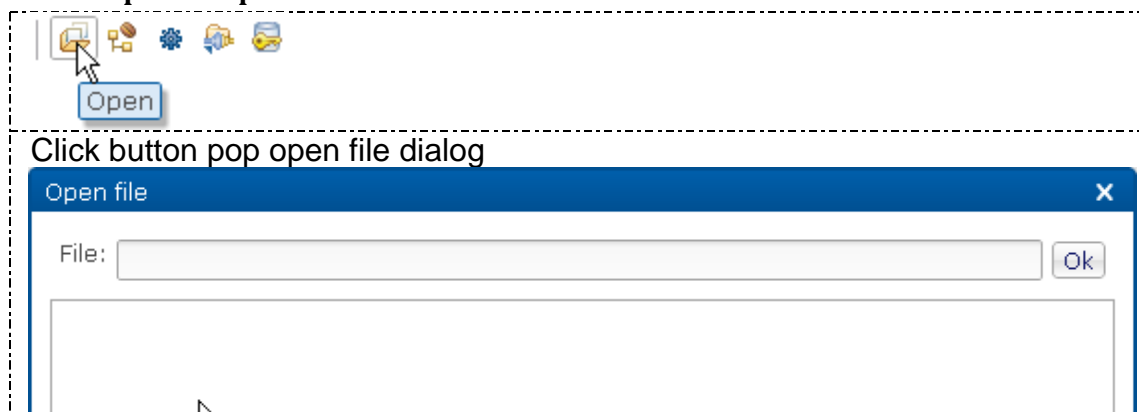
Click this button apply setting.



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 window with the following components labeled:

- File Name:** Bitstream:beijing_...MHz_multiservice_20110908.ts
- Section List:** The left pane showing a list of sections (PAT, CAT, PMT) with their TID, Ext, Ver, and Sec_no.
- Result tree:** The top right pane showing a tree view of the selected section (TID = 2[0x2]).
- Text Result:** The bottom right pane showing the raw data of the selected section.
- Section packet Raw data:** The bottom right pane showing the syntax of the selected section.
- Syntax:** The bottom right pane showing the syntax of the selected section.
- App Service list With SDT:** The bottom left pane showing a list of applications (ServiceList, EPG, App123).
- App EPG With EIT:** The bottom left pane showing a list of applications (ServiceList, EPG, App123).
- 3rd app created by user:** The bottom left pane showing a list of applications (ServiceList, EPG, App123).
- Time elapse view (PCR):** The bottom right pane showing a time elapse view (PCR).

The 'Section' pane displays a list of sections with the following details:

- 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]

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]	

Tree	Section	Section Raw	Syntax
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	

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

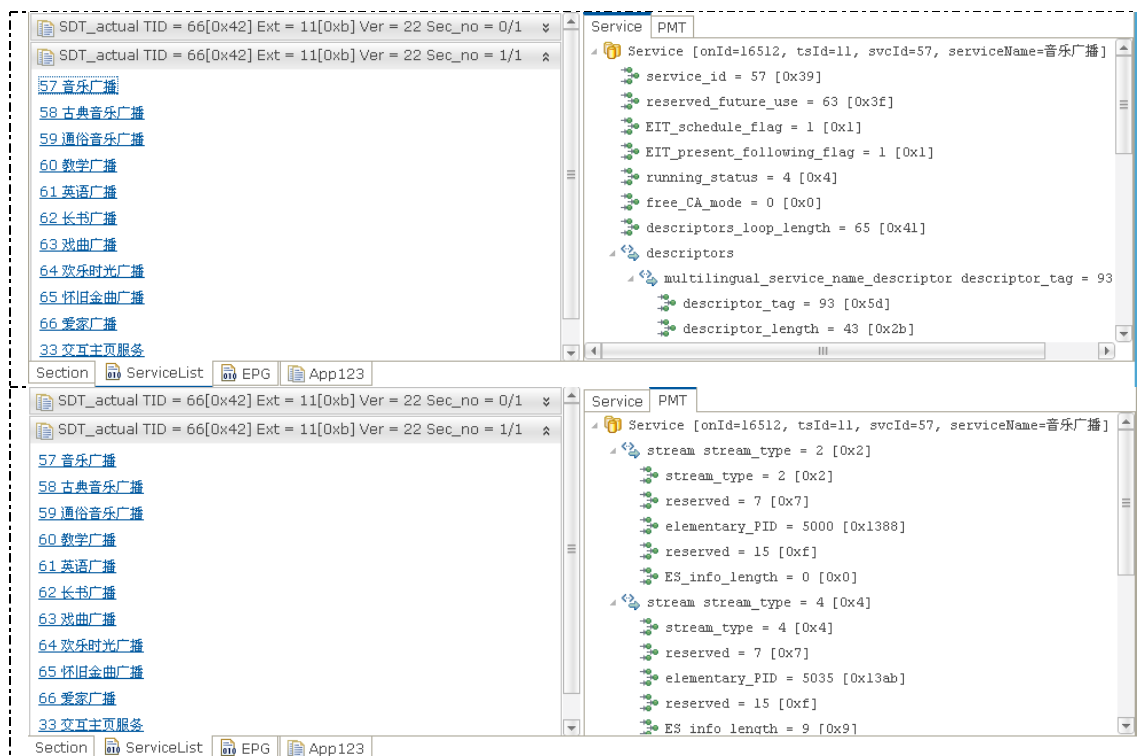
Application Locate: %INSTALL_DIR%/3rd/src

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

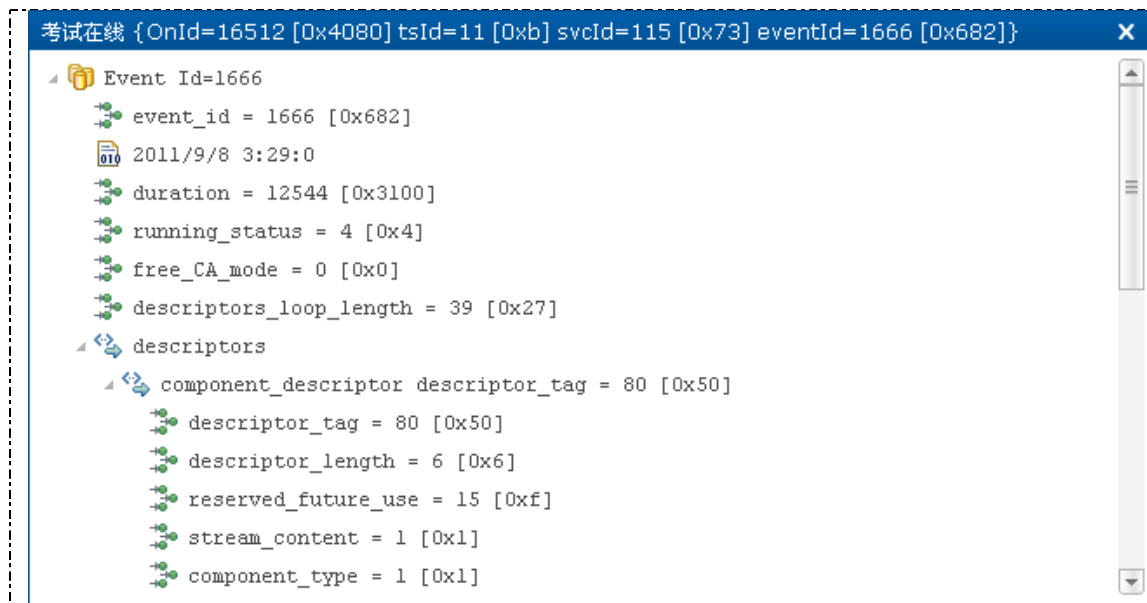


2.3.2.2. EPG application

EPG Application base on EIT.



Double click each event to show event detail information.



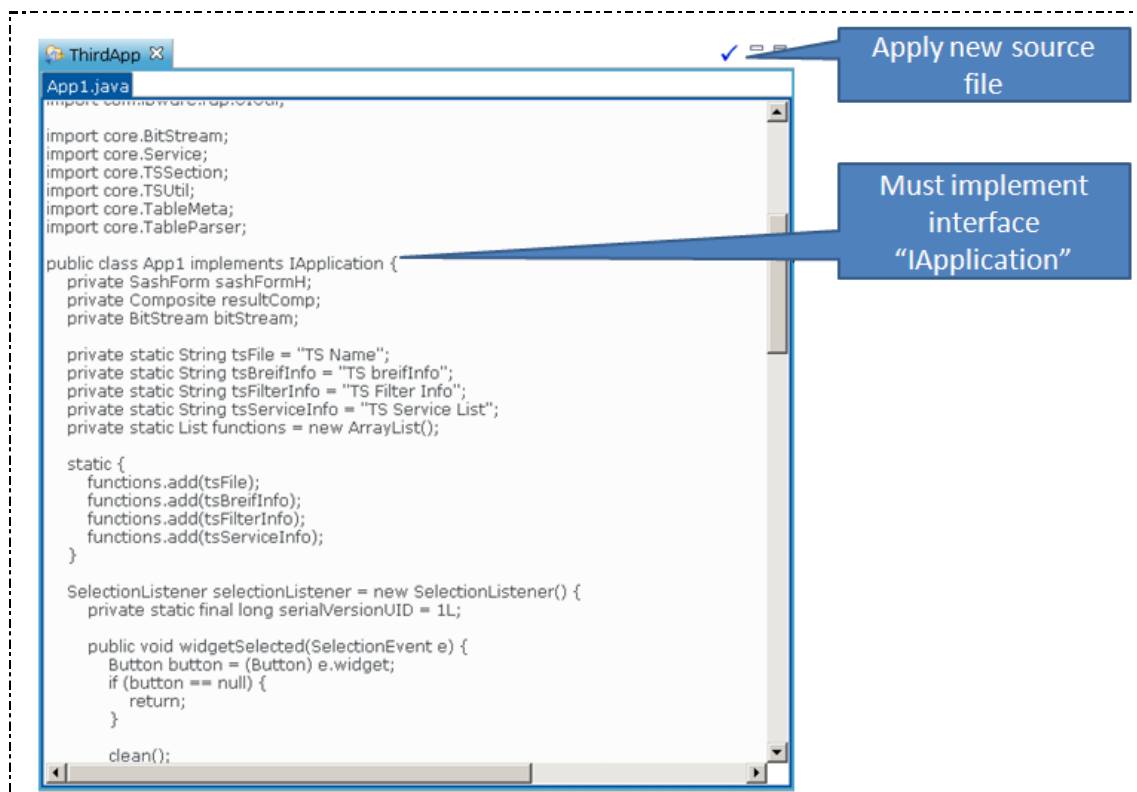
2.3.2.3. Demo Application

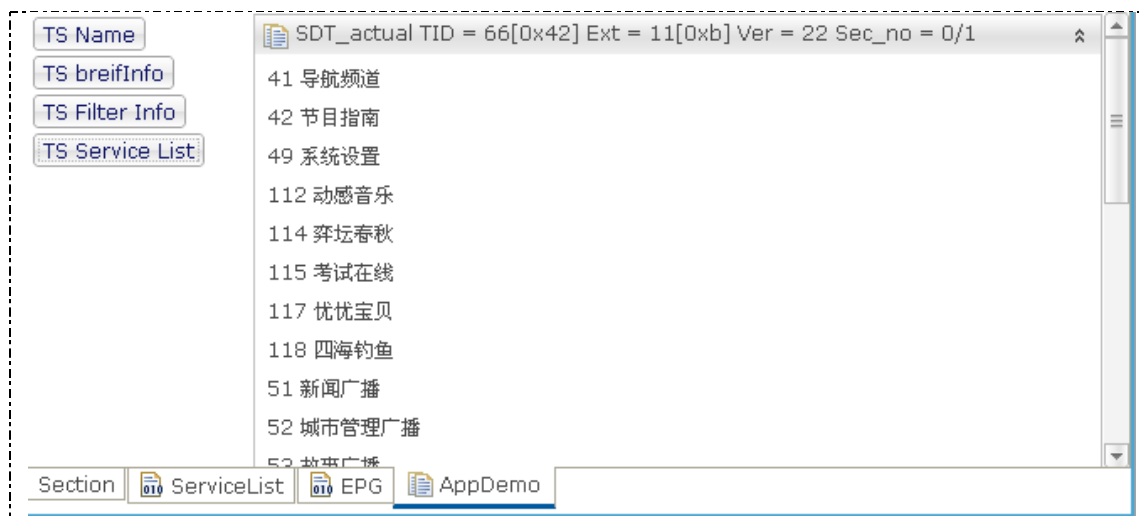
The Demo App shows some system information.

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 flylb1@gmail.com

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