

RTT Protobuf Data Doc – CN

Document Info
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Created: 2024/02/20
Update Log: <ul style="list-style-type: none">• 2024/02/20 Created

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Protobuf

Protobuf file

```

syntax = "proto3";

package Agora.SpeechToText;

option objc_class_prefix = "Rtt";

option csharp_namespace = "AgoraRTTSample.Protobuf";

option java_package = "io.agora.rtc.speech2text";
option java_outer_classname = "AgoraSpeech2TextProtobuffer";

message Text {
    int32 vendor = 1;           // Not used
    int32 version = 2;         // Not used
    int32 segnum = 3;          // Not used
    int64 uid = 4;             // Rtc uid
    int32 flag = 5;            // Not used
    int64 time = 6;            // isFinaltrue0
    int32 lang = 7;            // Not used
    int32 starttime = 8;       //
    int32 offtime = 9;         //
    repeated Word words = 10;   // Array
    bool end_of_segment = 11;   //
    int32 duration_ms = 12;     //
    string data_type = 13;      // transcribe, translate
    repeated Translation trans = 14; // Array
    string culture = 15;        // RTT
    int64 text_ts = 16;        //
}

message Word {
    string text = 1;           //
    int32 start_ms = 2;        //
    int32 duration_ms = 3;     //
    bool is_final = 4;         //
    double confidence = 5;     //
}

message Translation {
    bool is_final = 1;         //
    string lang = 2;           //
    repeated string texts = 3; //
}

```

text_ts说明

新版本的API中，为了应对实时翻译中间结果的对齐问题，在protobuf数据里增加了 text_ts 字段。

例如

uid 10001 的RTT和翻译结果如下

```

This is a sample

This is an other sample

```

Client端在 onStreamData 中收到数据 be like 下面的顺序

1. This *is a sample*.
2. This *is a sample*.
3. 这是
4. This *is a sample*.
5. This is a sample
6. This is a sample. (isFinal)
7. This *is an other sample*.
8. 这是一个例子
9. 这是一个例子。(isFinal)

在旧版本的 protobuf 数据中，由于没有text_ts，8 的翻译无法正确对应到 6 上

现版本中

```

1. This is a sample.           (text_ts: 1)
2. This is a sample.           (text_ts: 2)
3. 这是                        (text_ts: 2)
4. This is a sample.           (text_ts: 3)
5. This is a sample            (text_ts: 4)
6. This is a sample. (isFinal) (text_ts: 5)
7. This is an other sample.
8. 这是一个例子                (text_ts: 4)
9. 这是一个例子。(isFinal) (text_ts: 5)

```

可以使用 text_ts 来将翻译和原句对应

PS: text_ts 为unix时间戳，例子中的1 2 3 4 只是例子

Generate source code

protobuf lib

In MacOS (arm), use protoc-21.12-osx-aarch_64

Gen code script

At first, save the Protobuf file as *SttMessage.proto*

Objective-c, java, C\#

```

#!/bin/sh

./protoc-21.12-osx-aarch_64/bin/protoc \
--java_out=$(pwd)/code/java \
--objc_out=$(pwd)/code/objective-c \
--csharp_out=$(pwd)/code/csharp \
./SttMessage.proto

echo "Generate code finished."

```

javascript

Install javascript lib

Add devDependencies in Package.json

```

...
"devDependencies": {
  ...
  "pbjs": "^0.0.14",
  "protobufjs-cli": "^1.1.2",
  ...
}
...

```

Run npm install

```
npm install
```

Run shell script to generate javascript code

```

# Add pbjs path
export "PATH=$PATH:{absolute path of protobufjs-cli in you node_modules}/bin"
# for example: /Users/Agora/Solutions/RttWebDemo/src/node_modules/protobufjs-cli/bin

# gen javascript code
pbjs -t json-module -w es6 ./SttMessage.proto > ./SttMessage_es6.js

```

Parse stream data to RttText

iOS (Swift)

Import protobuf lib in Podfile

```
pod "Protobuf", "3.21.12"
```

Swift code

```
// AgoraRtcEngineDelegate function
func rtcEngine(_ engine: AgoraRtcEngineKit, receiveStreamMessageFromUid uid: UInt, streamId: Int, data: Data) {
    // check the bot uid
    guard uid == {puher bot uid} else {
        return
    }
    // parse data
    let text = try? SttText.parse(from: data)
    ...
}
```

Android

```
// **TODO**
```

C#

```
private void InitRtcEngine()
{
    RtcEngine = Agora.Rtc.RtcEngine.CreateAgoraRtcEngine();
    AgoraEventHandler handler = new AgoraEventHandler(this);
    RtcEngineContext context = new RtcEngineContext(_appId, 0,
                                                CHANNEL_PROFILE_TYPE.CHANNEL_PROFILE_LIVE_BROADCASTING,
                                                AUDIO_SCENARIO_TYPE.AUDIO_SCENARIO_DEFAULT);

    RtcEngine.Initialize(context);
    RtcEngine.InitEventHandler(handler);
}
// event handler
internal class AgoraEventHandler: IRtcEngineEventHandler
{
    public override void OnStreamMessage(RtcConnection connection, uint remoteUid, int streamId, byte[] data, uint length, ulong sentTs)
    {
        //Debug.Log(String.Format("remoteUid: {0}", remoteUid));
        if (remoteUid == {puher bot uid}) {
            AgoraSTTSample.Protobuf.Text t = ProtobufUtility.ParseProtobufData(data);
            ...
        }
    }
}
```

Javascript (Vue3)

```
import AgoraRTC from "agora-rtc-sdk-ng"
import protoRoot from "@/protobuf/SttMessage_es6.js"
// rtc client
this.rtc.client = AgoraRTC.createClient({ mode: "live", codec: "vp8", role: this.role })
this.rtc.client.on("stream-message", this.onStreamMessage.bind(this))
function onStreamMessage(uid, stream)
{
  if (uid !== {pusher bot uid} ) {
    return
  }
  let textstream = protoRoot.Agora.SpeechToText.lookup("Text").decode(data)
  ...
}
```
