- Motivations:

The issue is existing functions of repo, basic insertion and watch, cannot support the real-time video data storage. The repo is required to fetch data efficiently, with low latency and low bandwidth. However, video frames are under application-specific namespace. Thus, we needs the repo to have knowledge of namespace and ability to periodically fetch data, without continuous command Interests.

- Requirements:

Pattern = preknowledge of the application namespace and data generating rates.

- Implementation:

The requester uses the pattern name and the fetching prefix to trigger the start and stop of pattern.

A pattern-handler is defined to handle these commands.

Data are stored in a RocksDB database.

(Given commits Peter made after merging my codes, I think he modifies the pattern used to test.)

- Protocols:

Requester	Repo	Data producer
1		
1	1	
++ Pattern command	++	
++		
I	1 1	
++ Confirm start	1 1	
++ Reject command	++	
(with status code)	I	
1	++ Interest for Data	++
1	P	>
1	++	1 1
1	I	1 1
I	++ Data	1 1
1	P <=================================	====
	++	++
	1	

1	~	~
	~	~
		I
1	++ Interest for Data +	+
	P >	ı
1	++	l
	TT	
	++ Data	
	P <=======	
	++	+
1		
	~	~
1	~	~
1		
I		
I	I	
++ Cancel interest	++	
++		
++ Cancel response		
++	++	

Pattern Command:

/repo/pattern/<RepoCommandParameter>/<timestamp>/<random-value>/
<SignatureInfo>/<SignatureValue>

Parameters:

Name (required) should be /<PatternName>/<FetchPrefix>.
PatternName is the name of FetchPattern. FetchPrefix is the prefix which will be fetched.

Cancel Command:

/repo/cancel/<RepoCommandParameter>/<timestamp>/<random-value>/<
SignatureInfo>/<SignatureValue>

Parameters:

Name (required) is the prefix which will be fetched.

StatusCode Definition:

StatusCode	Description	
100	The command is OK. Fetch pattern starts to fetch the prefix.	
101	Fetching is stop.	
401	This pattern command or cancel command is invalidated.	
402	There is already a pattern fetching the specified prefix.	
403	Malformed command.	
404	No such this process is in progress. (cancel command) Specified fetch pattern does not exist. (pattern command)	