

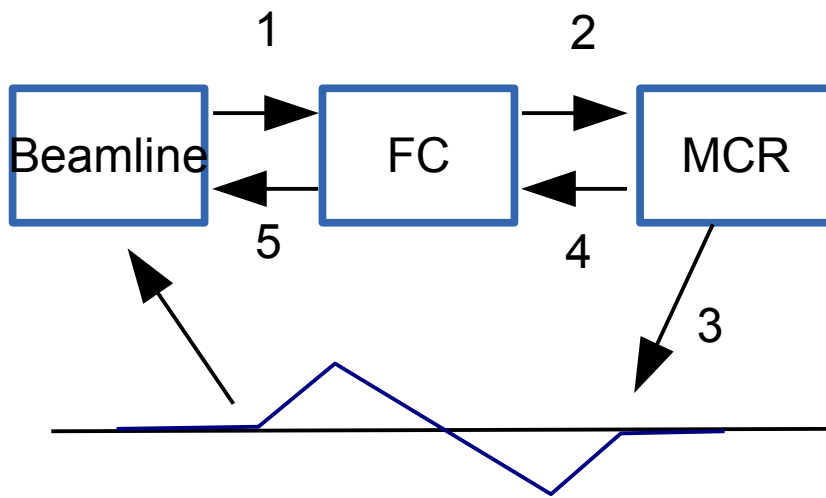
# Roll-Out of Web-based, Beamline-Initiated, Steering Request System

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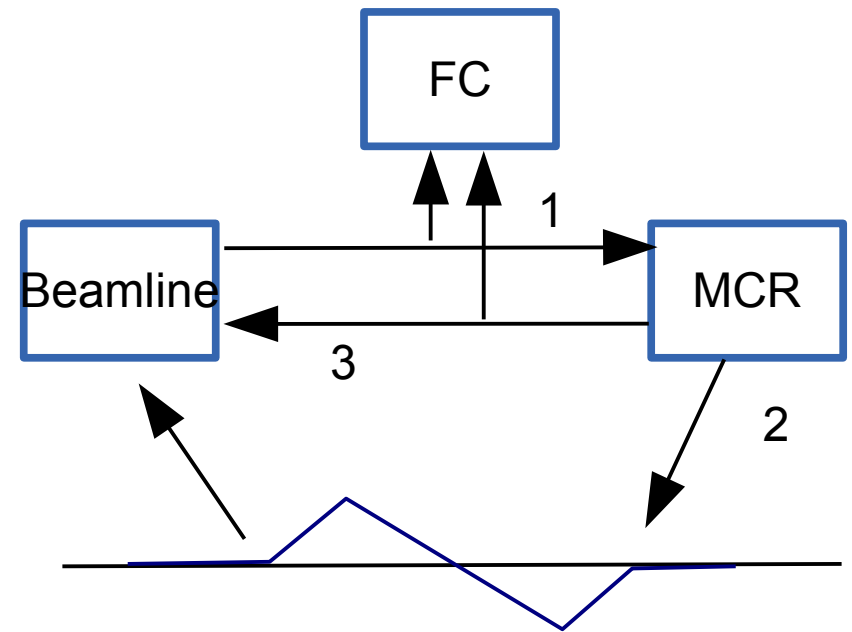
TWG Meeting  
Jan 21st, 2016

# Motivation

- Web-based steering requests reduce wait times and errors in communicating beamline steering requests
- Previously, numbers were orally passed on twice. Now they are typed in once.



Before



After



# Tests before Rolling Out Web-based Steering Requests

- System tested on several beamlines of the Beam Stability Working Group since summer: 23 CU, 24 CU, 13 ID, 27 ID



# Steering Request Web Page

The screenshot shows a web browser window titled "APS Steering Request - Mozilla Firefox". The address bar shows the URL: `www.aps.anl.gov/Accelerator_Systems_Division/Accelerator_Operations_Physics/Internal/Reference/Test2/steeringrequest.php`. The page content includes:

- A dropdown menu at the top for selecting a beamline.
- An "UP" section with a numeric input field (0) and buttons for 5, 3, and 1.
- An "OUT" section with buttons for 1, 3, and 5, and a numeric input field (0).
- A "DN" section with a numeric input field (0) and buttons for 1, 3, and 5.
- A "Pending Command:" text box.
- Four buttons: "CLEAR", "SEND REQ" (highlighted in green), "OPTIMIZE", and "GAP SCAN".

Annotations with arrows point to various elements:

- "Individual beamline Names will be displayed here" points to the dropdown menu.
- "Type number of microradians here" points to the numeric input field in the "UP" section.
- "Increment buttons" points to the 5, 3, and 1 buttons in the "IN" section.
- "Formatted commands appear here" points to the "Pending Command:" text box.
- "Press button" points to the "SEND REQ" button.

Notes on the page:

- "Note: This is a request for steering only. The actual amount steered will be dictated by electron beam position limits."
- "Note: Gap scans will not be performed during the first day of the User Run."



# 4 Microradian Outboard for 3ID

APS Steering Request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

APS Steering Request

www.aps.anl.gov/Accelerator\_Systems\_Division/Accelerator\_Operations\_Physics/Internal/Refe

03ID

1

UP

0

5

3

1

1

3

5

4

OUT

2

Note: This is a request for steering only. The actual amount steered will be dictated by electron beam position limits.

IN 0 5 3 1 1 3 5

1

3

5

0

DN

3

Note: Gap scans will not be performed during the first day of the User Run.

Pending Command: 4 OB

4

CLEAR SEND REQ OPTIMIZE GAP SCAN

# Canted Sector 23: 5 microradian inboard

The screenshot shows the 'APS Steering Request' web interface in Mozilla Firefox. The browser address bar displays the URL: [www.aps.anl.gov/Accelerator\\_Systems\\_Division/Accelerator\\_Operations\\_Physics/Internal/Refe](http://www.aps.anl.gov/Accelerator_Systems_Division/Accelerator_Operations_Physics/Internal/Refe). The page content includes a central control panel with several input fields and buttons. Annotations are present:

- 1**: Points to a dropdown menu at the top center containing the value '23US'.
- 2**: Points to the 'IN' dropdown menu on the left side, which currently shows the value '5'.
- 3**: Points to the 'SEND REQ' button at the bottom center, which is highlighted in green.
- 4**: Points to the 'SEND REQ' button at the bottom center.

The interface also features a central vertical column of buttons with values 0, 5, 3, 1, 1, 3, 5, 0, and labels 'UP' and 'DN'. A 'Pending Command' field at the bottom shows '5 IB'. Two notes are visible: 'Note: This is a request for steering only. The actual amount steered will be dictated by electron beam position limits.' and 'Note: Gap scans will not be performed during the first day of the User Run.'

# 3ID: Optimize!

APS Steering Request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

APS Steering Request x

www.aps.anl.gov/Accelerator\_Systems\_Division/Accelerator\_Operations\_Physics/Internal/Refe

03ID

1

UP

0

5

3

1

IN 0 5 3 1 1 3 5 0 OUT

1

3

5

0

DN

2

Note: This is a request for steering only. The actual amount steered will be dictated by electron beam position limits.

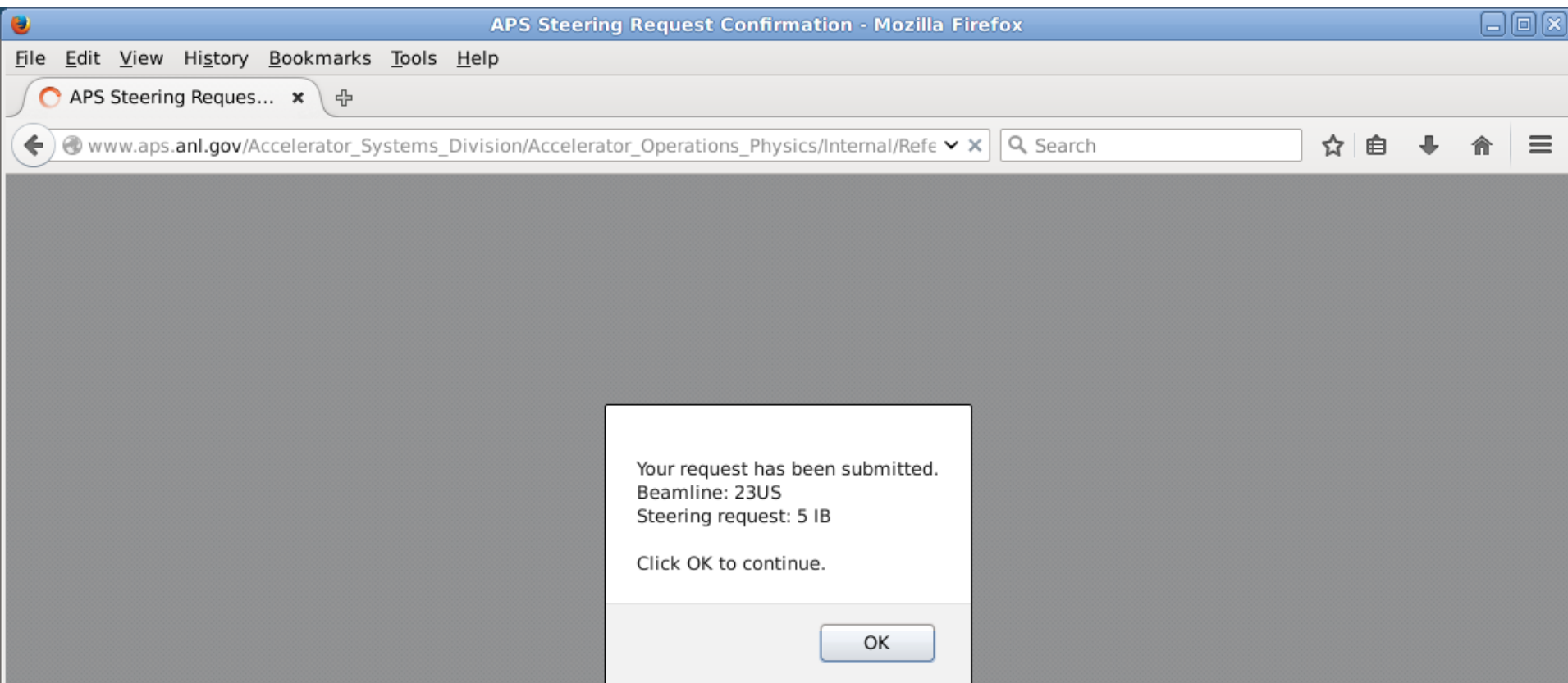
Note: Gap scans will not be performed during the first day of the User Run.

Pending Command: OPTIMIZE

CLEAR SEND REQ OPTIMIZE GAP SCAN

3

# Expect Confirmation After Sending a Request





# Steering Queue: After Confirmation



Request a steering

Beamline	Request	Time Sent	Time Acknowledged	Time Scheduled	State
23US 	5 IB	Jan 15 18:15		<input type="button" value="-"/> <input type="button" value="↑"/>	Requested  

Not yet acknowledged by MCR operators. Operators acknowledge by clicking the green check button. Replaced by a Time stamp.

# Operators schedule the steering by selecting a time window value

The screenshot shows a web browser window titled "APS Steering Request - Mozilla Firefox". The address bar displays the URL: [www.aps.anl.gov/Accelerator\\_Systems\\_Division/Accelerator\\_Operations\\_Physics/Internal/Refe](http://www.aps.anl.gov/Accelerator_Systems_Division/Accelerator_Operations_Physics/Internal/Refe). The page content features a table with the heading "Request a steering" and a confirmation dialog box.

Beamline	Request	Time Sent	Time Acknowledged	Time Scheduled	State
23US	5 IB	Jan 15 18:15		15	Requested

Click OK to Schedule this request.

Cancel OK

# After Several Requests: MCR and FC view

Request a steering

Beamline	Request	Time Sent	Time Acknowledged	Time Scheduled	State
13ID	OPTIMIZE	Jan 15 18:18		<input type="button" value="-"/> <input type="button" value="↑"/>	Requested
02ID	3 IB	Jan 15 18:17		<input type="button" value="-"/> <input type="button" value="↑"/>	Requested
01ID	5 OB	Jan 15 18:17		<input type="button" value="-"/> <input type="button" value="↑"/>	Requested
23US	5 IB	Jan 15 18:15	Jan 15 18:16	Jan 15 18:31	Pending

Cancel buttons

Time stamps viewable by beamline

At this point the operator will effect the steering.  
(BTW steering process is faster since Dec. 2015, and no longer suffer from micron-size transients)

The view from each beamline workstation would

# Steering Request Queue: Completed Steering for 23US

APS Steering Request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

APS Steering Request x APS Steering Request x

www.aps.anl.gov/Accelerator\_Systems\_Division/Accelerator\_Operations\_Physics/Internal/Refe Search

### Request a steering

Beamline	Request	Time Sent	Time Acknowledged	Time Scheduled	State
13ID	OPTIMIZE	Jan 15 18:18		<input type="text" value="-"/>	Requested
02ID	3 IB	Jan 15 18:17	Jan 15 18:18	<input type="text" value="-"/>	Pending
01ID	5 OB	Jan 15 18:17	Jan 15 18:18	Jan 15 18:28	Pending
23US	5 IB	Jan 15 18:15	Jan 15 18:16	Jan 15 18:31	Complete

# Steering Request Details

- MCR gets audible notification, like an alarm
- Acknowledgment of request is sent from MCR for all to see
- Expected time to steering is sent back from MCR for all to see
- When steering is done, a “completed” status is sent for all to see
- Web page address will be given out
- Beamlines must be registered with their workstation IP so that they can be allowed to send request (authentication)
  - Web page for *registration* will be given out
  - Canted undulator sector with possible multiple IP is handled in a special way. Other exceptions can be allowed
  - FC can also send any request for all beamlines
- Request data are stored in a web server. Can do statistics on requests.
- ID, BM, steering, optimization and x-ray bpm gap scan are possible.

# Mandatory Sign-up (can ask FC for help)

- [http://www.aps.anl.gov/Accelerator\\_Systems\\_Division/Accelerator\\_Operations\\_Physics/Internal/Reference/Test2/signup.php](http://www.aps.anl.gov/Accelerator_Systems_Division/Accelerator_Operations_Physics/Internal/Reference/Test2/signup.php)

## Web-based Steering Request Sign-up

Beamline(s):

Phone Number:

Contact Name:

E-mail address (optional):

Steering requests for a specific beamline may only be made if the computer on which the request is being made is registered. The above form is a request to register a specific computer in the system.



# Web-based Steering Request Sign-up

Beamline(s):  1BM  1ID  1US  1DS  2BM

Phone Number:

Contact Name:

E-mail address (optional):

Steering requests for a specific beamline may only be made if the computer on which the request is being made is registered. The above form is a request to register a specific computer in the system.

Each individual computer that you wish to make steering requests from must be registered in the system. You may select one or more beamlines for each computer. If you want to be able to steer for multiple beamlines on a single machine, make sure to control-click on all desired beamlines when you request your registration.

The contact phone number that you enter should be the number for the phone which you would want the Control Room to call should they have any questions concerning a steering request.

The contact name should be a person that is able to authorize steering requests for the specified beamlines. This person will be confirmed by the Floor Coordinator during the registration process.

The e-mail address is optional and will only be used to send a confirmation e-mail once the sign-up request has been completed and the steering request web page has been made available for use.

