CRS iPad App
Results

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June 2014

research

Methogology

CRS App Testing

Testing Methodology
Informal Lab

This usability test of the CRS application utilized the following

- Test Participants - Internal Tekzenit employees with experience in using tablets, but who have not been affiliated with the CRS project (N=5)

- Equipment - An iPad with the installed software in Beta format for testing

- Experimenters - Three experimenters were used, a moderator, a recorder and a timer

- Based on Neilsen's Binomial equation and the fact that this is a Beta Test, an N of 5 test participants were utilized. This has been shown to uncover over 80% of usability problems if the "L" value in the equation is valid. It is suggested that the test be repeated after issues are corrected to uncover any blocking issues.

Participants were brought into a testing room where they were introduced to the experimenters, read the standard usability test preamble and given 11 Common Tasks to complete for a scheduling app.

The methodology included the think out loud protocol but time on task was recorded to gather a sense of how long it would take to complete tasks if the users found it easy to use and made limited or no comments. This led us to create three categories for success/failure:

- Success - Limited comments and minimal time to complete the task

- Partial Failure - Long time and many comments in completing the task. This included people who had to start over and backtrack several times before completing the task successfully

- Failure - Unable to complete the task not matter how much time was given to them.

This equates to the common practice of giving severity ratings to defects:

- Severity 1 - Failure to complete task

- Severity 2 - Ability to complete task with great difficulty

Users were presented with the CRS App on an iPad in a Horizontal position. This may have caused unnecessary success rates as the CRS App is to be mounted in a Vertical Position on the wall outside a conference room door.

- Horizontal placement is known to be more difficult for activating controls on small screens than with a horizontal placement due to accuracy in a three dimensional space

- No attempt was made to approximate the awkwardness of placement on the Horizontal plane that did not line up with the user's height and therefore their field of vision.

The User Tasks

1. Approach the CRS interface, take a moment to look it over and comment on your general thoughts without interacting with it.

2. You want to schedule a meeting on X Date: (Condition: day, week, month in the future; include conditions where the user has to scroll to find an open slot to schedule). (To schedule a meeting on a specific date and time)

3. You walk up to the CRS interface with a group of people and notice the conference room is empty. You want to input that you're taking the conference for a meeting that starts now so no one else will disturb you. (To explore the "Quick Meeting" function)

4. You want to find a meeting (Condition: day, week, month in the future; include conditions where the user has to scroll to find an open slot to schedule) and cancel it. (To find a meeting in the future and cancel it; Navigate through days, weeks months)

5. You want to schedule a repeating meeting.

6. You want to search for a meeting scheduled by <person> during the week of <date>. You don't find it, so search for it two weeks in the future. (Search for a meeting and Navigate in the week view)

7. You want to schedule a meeting sometime in the <month>. Tell us what the worst day to try to do so. (Search for a highly populated day, navigate from month to month, check visual treatment of % of time used)

8. You want to schedule a meeting sometime during the XX week but you don't know the exact date that will be required. Tell us what the best day would be to schedule a meeting in that week. (Check for open times for a meeting prior to scheduling it)

9. While looking at the <month> schedule you want to schedule a meeting on <date during the following month>. Show us how'd you do that. (Navigate from Month to Month)

10. You want to see a complete list of all meetings currently scheduled for the conference room. Show us how'd you do that. (Navigate to an area that shows all meetings)

11. Your meeting finished early so you want to free up that time on the CRS application so someone else, if they need to, can use the conference room. (Cancel a meeting using the home screen)

High Level Issues Overview
Summarization

High Level Issues

- The following High level issues are those that in the testing team's opinion, should be fixed prior to further usability testing as they are deemed to be consistent hinderances to the ease of use of the CRS App and led to either full or partial task failure.

- These issues do NOT include programming errors that can be found in later sections.

- It is advised that all sections of this report be read to fully understand the UI, Navigation and Programmic issues that need to be corrected.
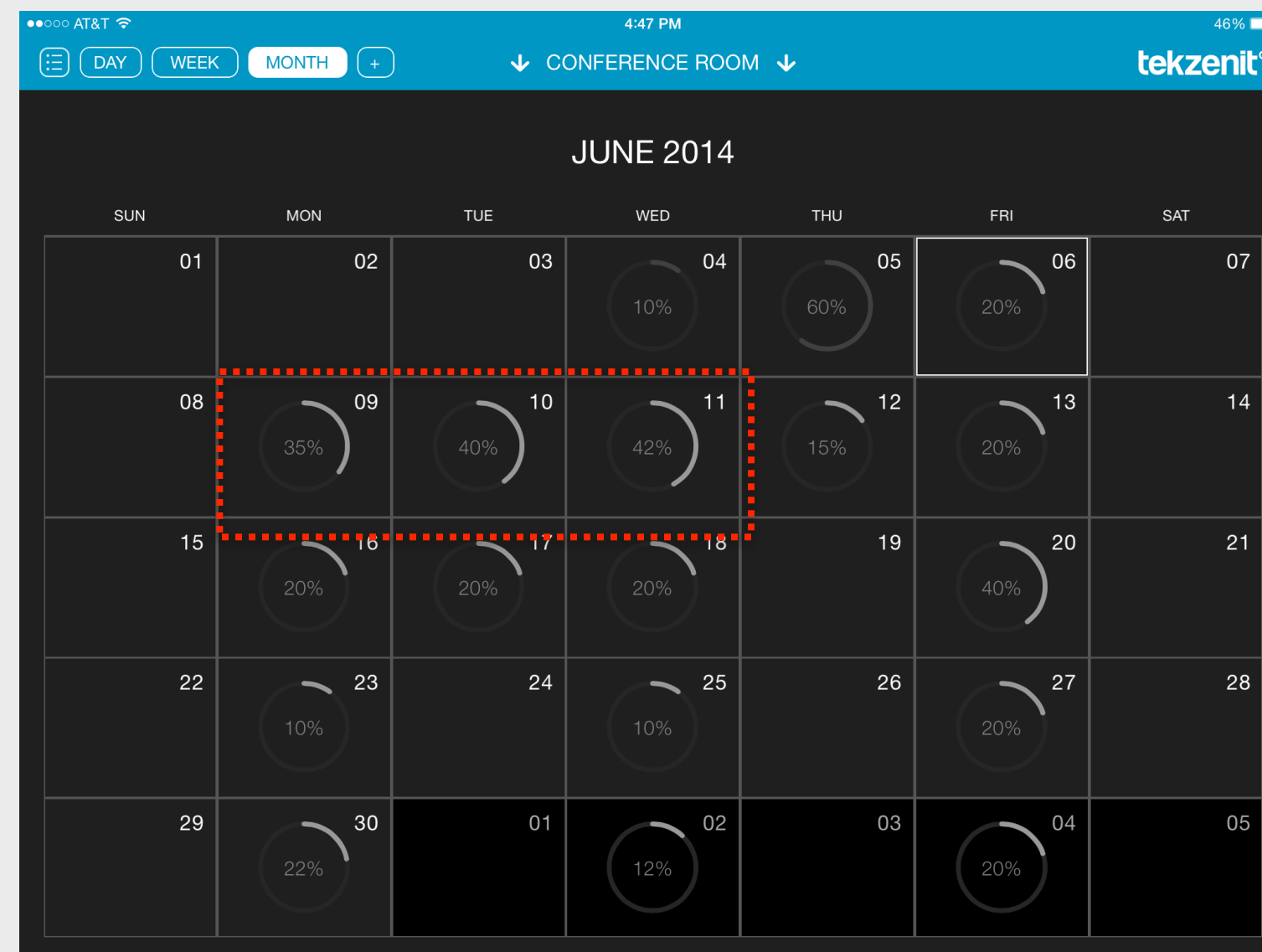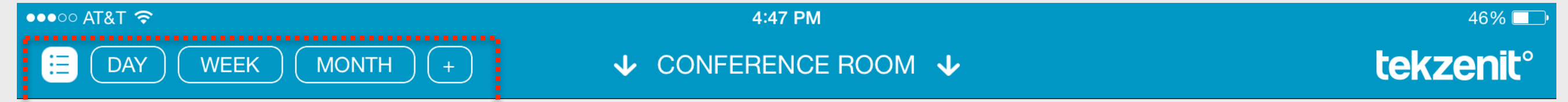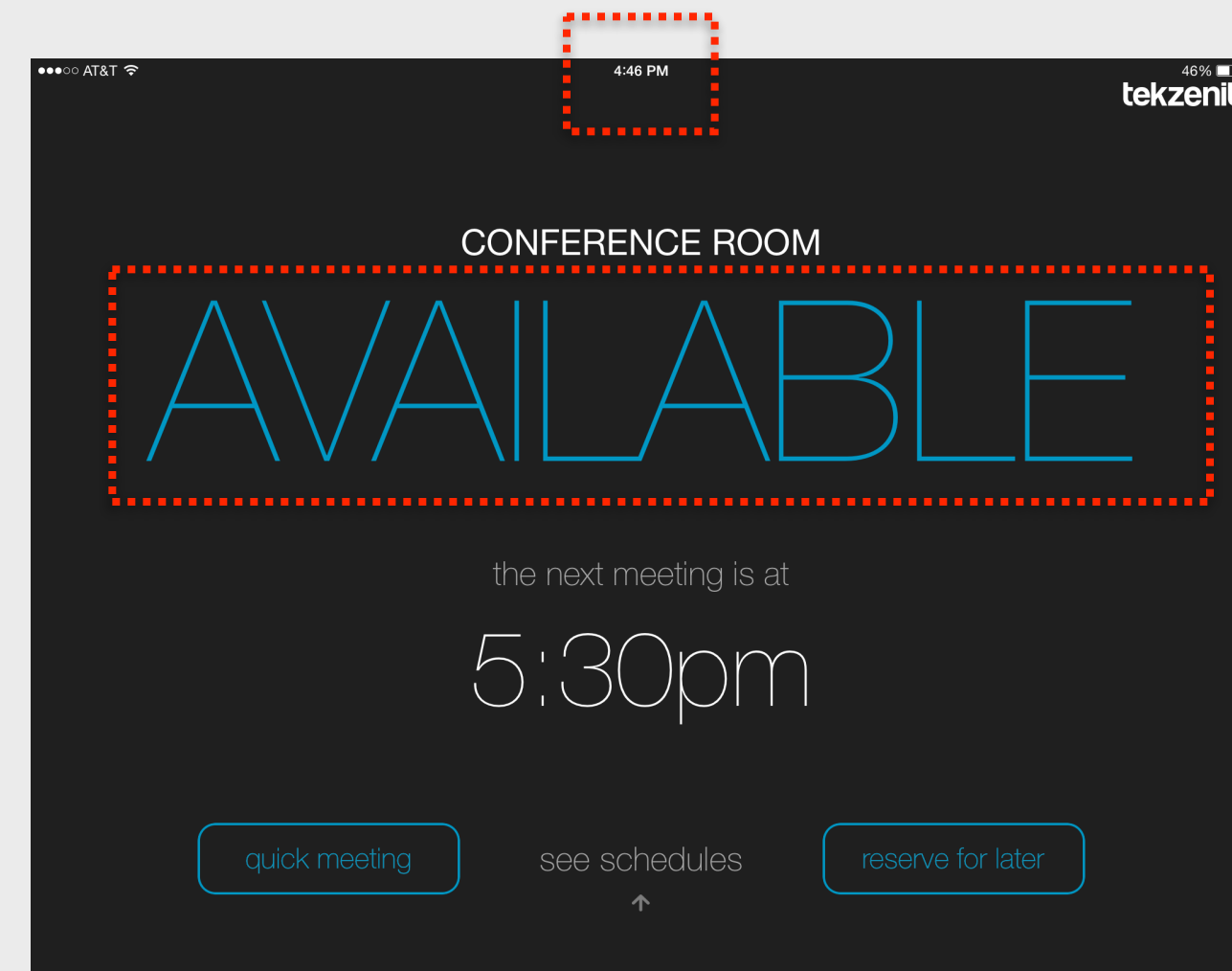
High Level Issues

Navigation

- Users' inclination was to swipe Vertically for Hours in the day, and to swipe Horizontally for weeks in the month and months in the year. Current interface did not support the last two movements.

- Arrows at the top of the interface compelled the users to tap them to move (they looks like buttons; not indicators) but they were not items that could be activated that way

- No visual feedback was given indicating when the user had successfully activated the 'grab' function for swiping open the interface from the default display or to close that display; a 'glow' or highlight would indicate that it had been successfully captured

- Interface was sluggish with respect to swiping between weeks and months; delay in updating increased errors as users did not read for feedback, they expected the interface to behave in a coherent manner with other iPad apps
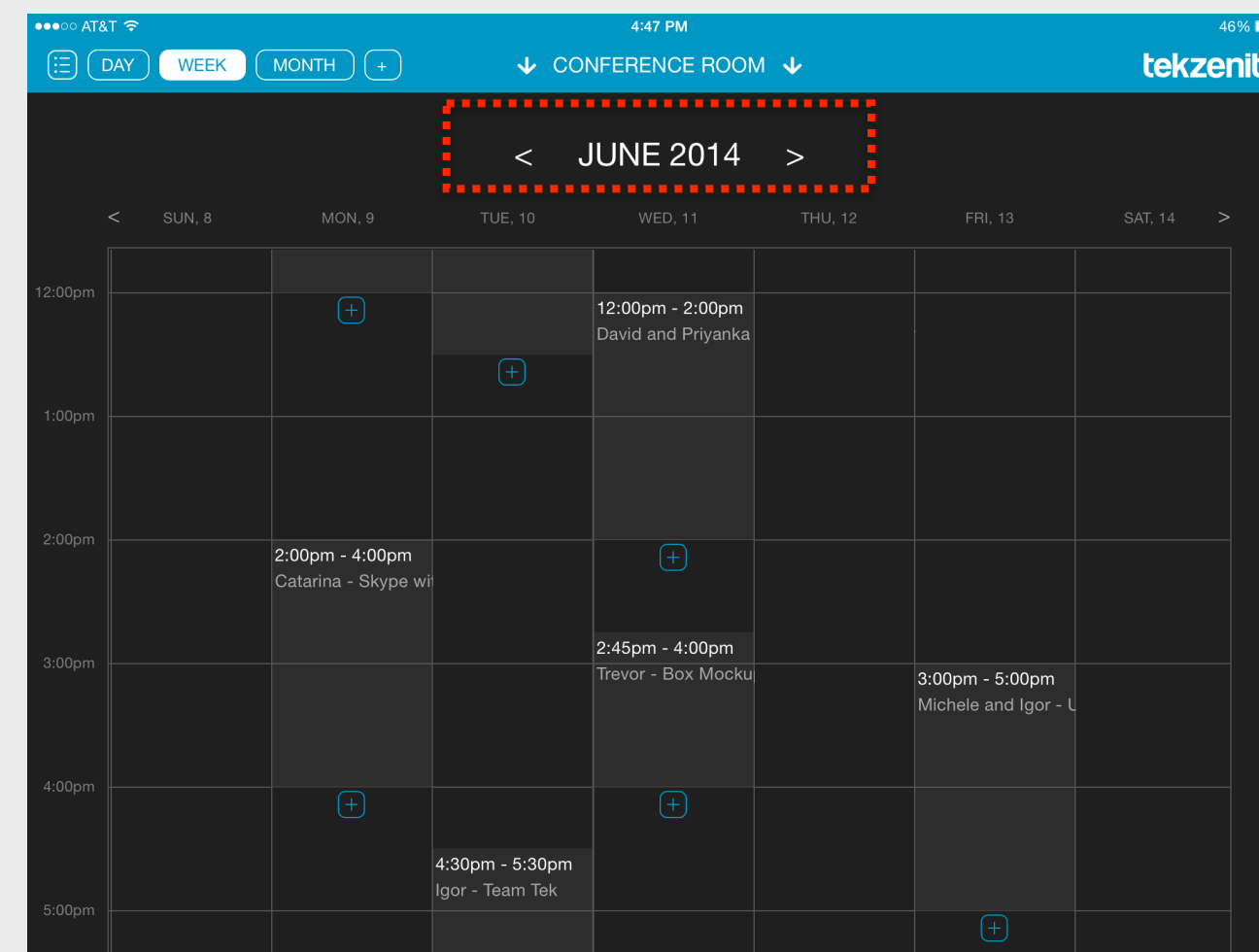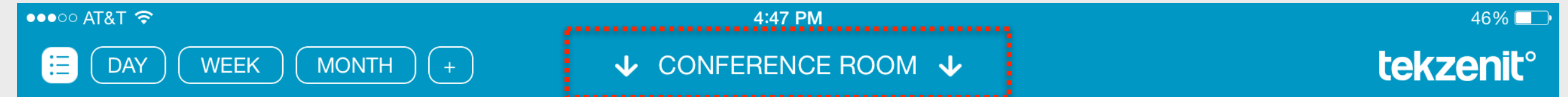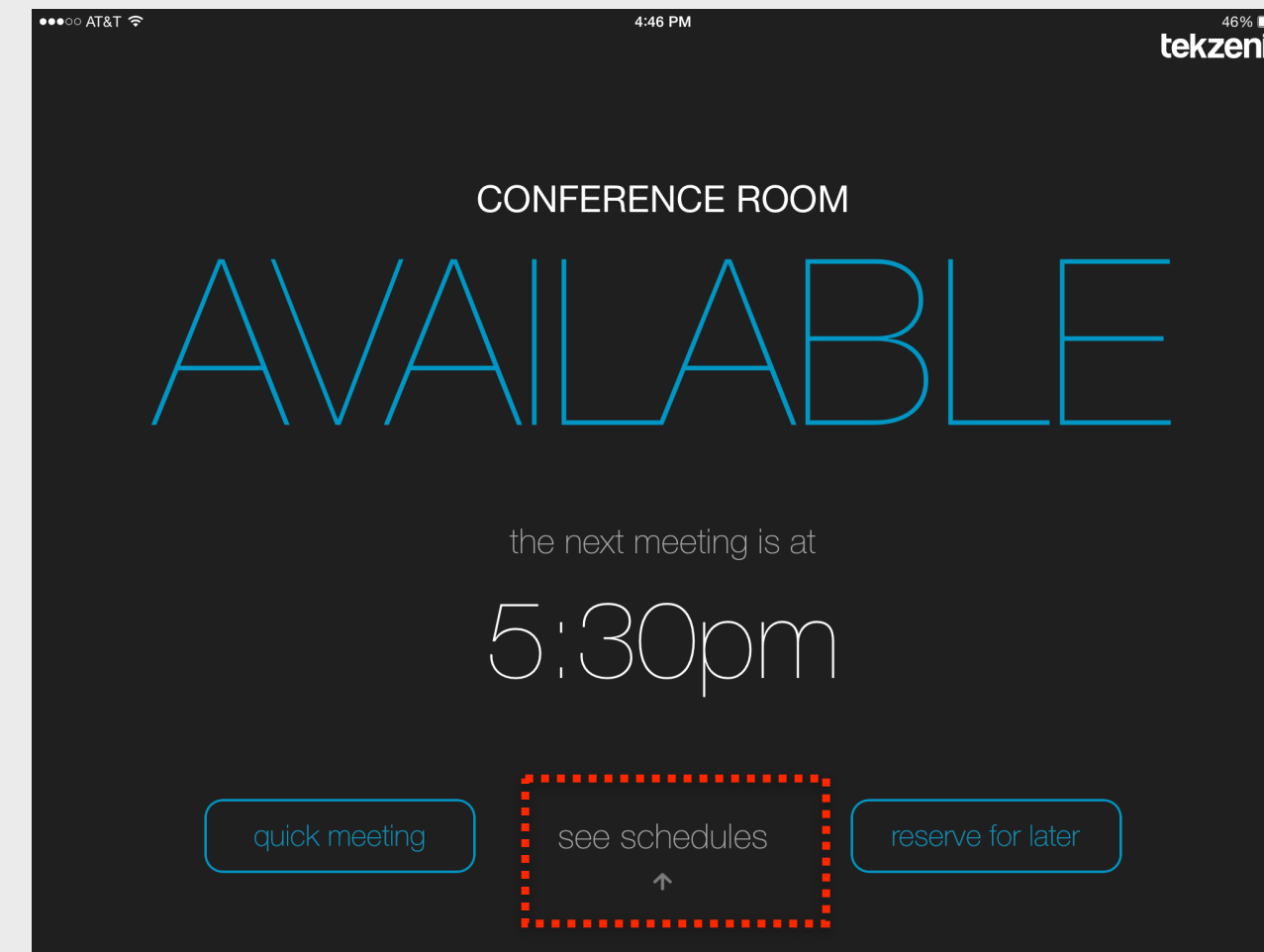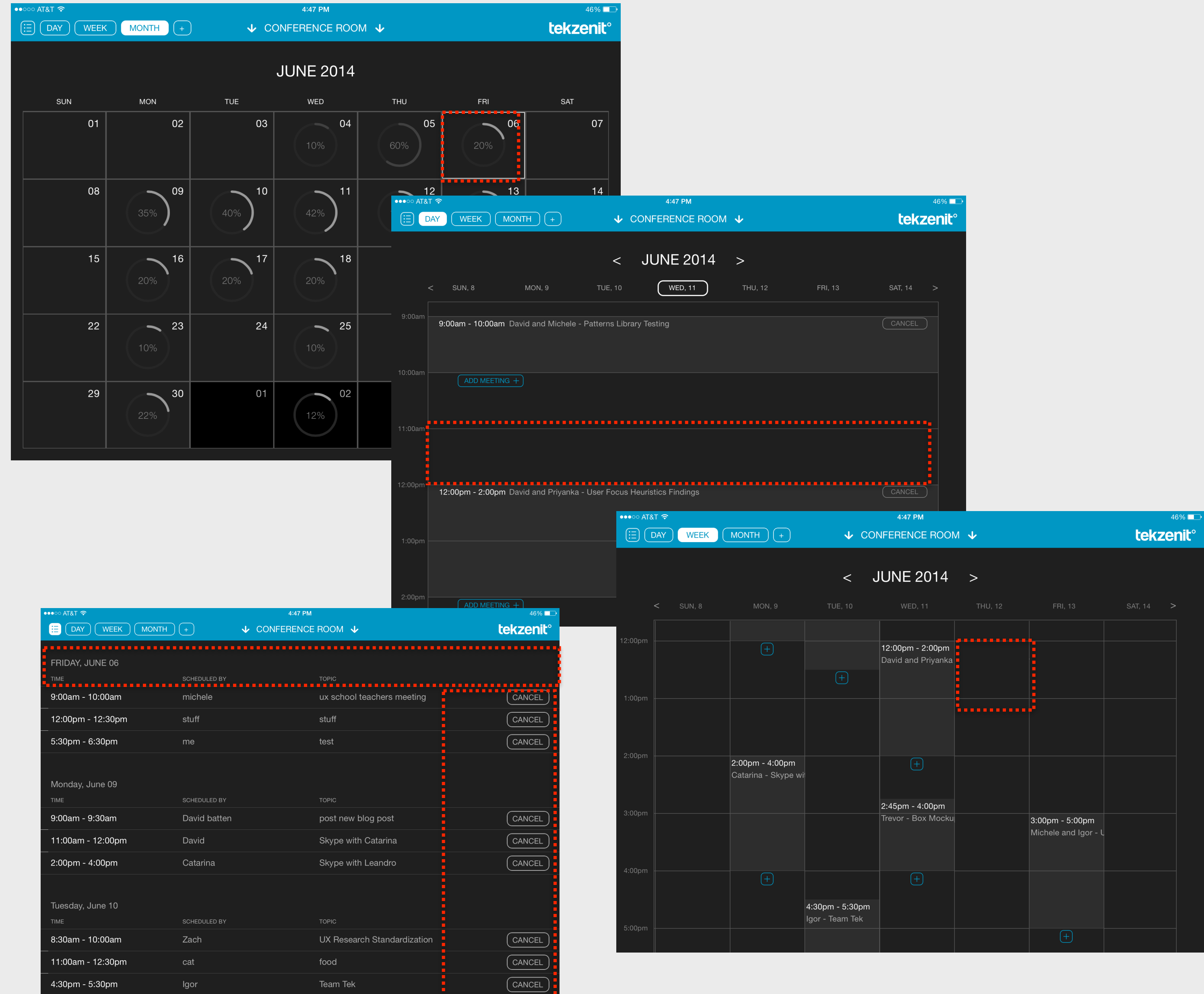
High Level Issues

UI Issues

- Since red is used for a busy conference room, Green should be used for Available (redundant color coding)

- UI does not display a large current time in comparison with next meeting time (uses system time at top of screen which is too small to easily discern/notice)

- List and Add a meeting icons are not intuitive; they should be text in this context

- The 'show' buttons are grouped with the 'do' buttons; they should be segregated to opposite sides of the "Conference Room" text

- Activation Buttons "List", "Day", "+" did not accommodate users with larger fingers and inadvertent activation took place; buttons should be made slightly larger to accommodate male finders or provide more separation between said buttons

- The circle metaphor along with the % utilized on the Monthly view is visually complicated. Users stated that this display was cluttered. The user is drawn to the graphics showing the EXACT percentage of utilization in graphical format and tries to discern the %. Further, the use of double numbers detracts from the day of the month comprehension
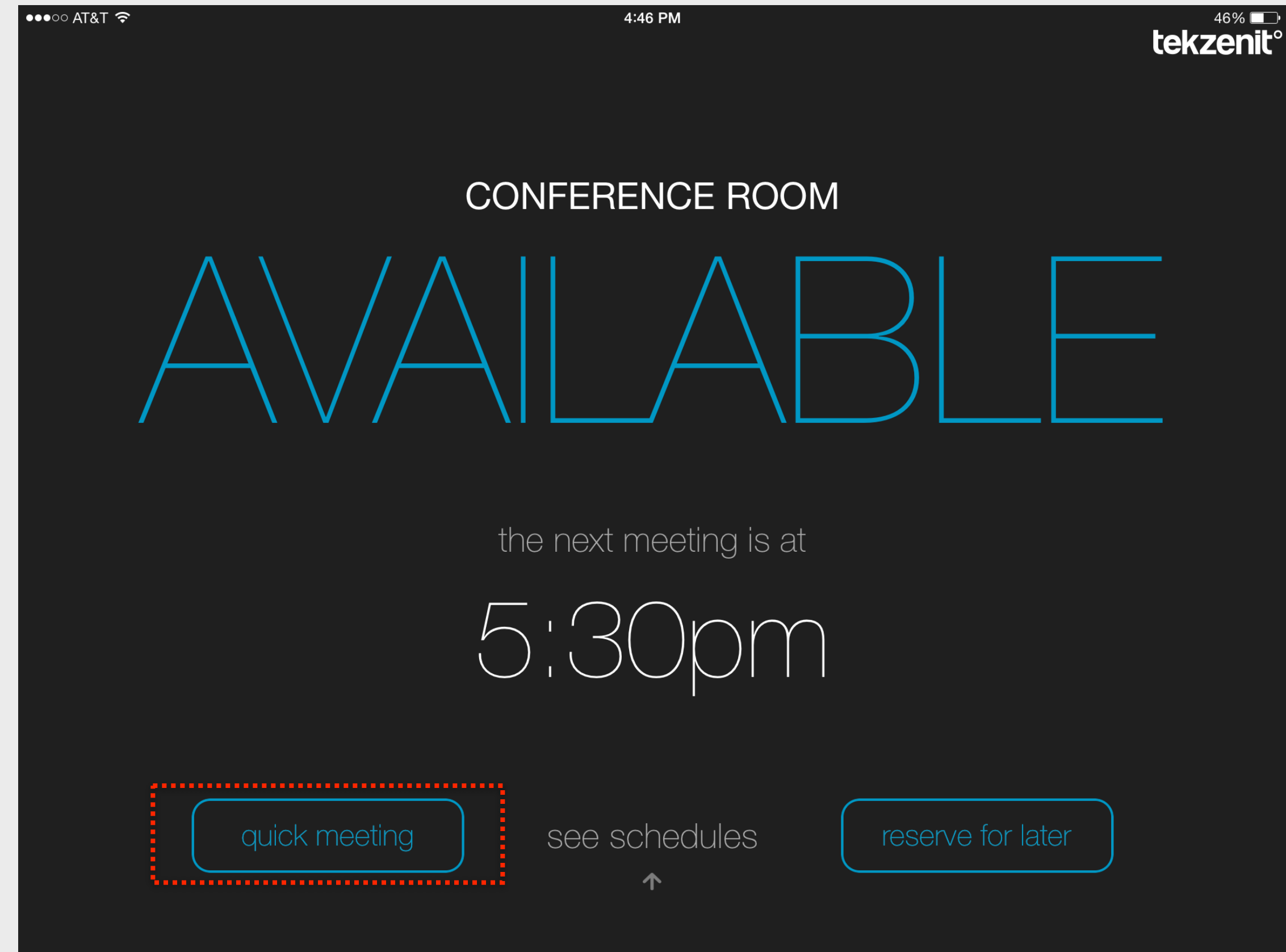
High Level Issues

Interaction Issues

- Users expected to tap on the hour of the day within the UI dividing cells to view a scheduled meeting (to cancel it or edit it) and to be able to schedule a meeting if the time selected was empty as in a true touch interface

- Editing a meeting was not a clearly delineated or provided function in the UI

- Users expected to tap on the day of the week/month in order to view meetings on that day and to start the scheduling process; they expected to be able to navigate from a single cell in the interface to the day to the hour in order to initiate the action of scheduling as in a true touch interface

- Users found frustrating that they thought they had to go back to the meeting list to cancel a meeting where they expected to see an edit button

- While searching for a meeting by a person or a topic, users found it frustrating that they could not filter the conference room list to find such information

High Level Issues

Verbiage Issues

- "Quick Meeting" did not resonate with users in light of the corresponding "reserve for later" button; In order to have parallel verbiage the wording should be "Meet Now"

High Level Issues

Data Entry

- Interface allows scheduling a meeting stopping time earlier than the starting time; range should be restricted according to human limitations

- The UI, when entering 'schedule new meeting' mode, puts the user on the current date, not the one from which the user entered the app therefore making the user always select the date even though they entered the scheduler from a day they found on the calendar. The default should be the day of the calendar they were in when they selected the "+" button or if they were NOT in the calendar, the current date.

- Abbreviation of the date creates an unnecessary cognitive load on the user

- Date should include the day of the week for the user as feedback that the correct date was selected

- In Keyboard mode, the "reserve" button is covered up until you click done; this is an unnecessary step and some users thought that 'next' should reserve the room

- Scheduler allows user to schedule meetings up to the year 3000; this should be restricted within 'normal human limits'
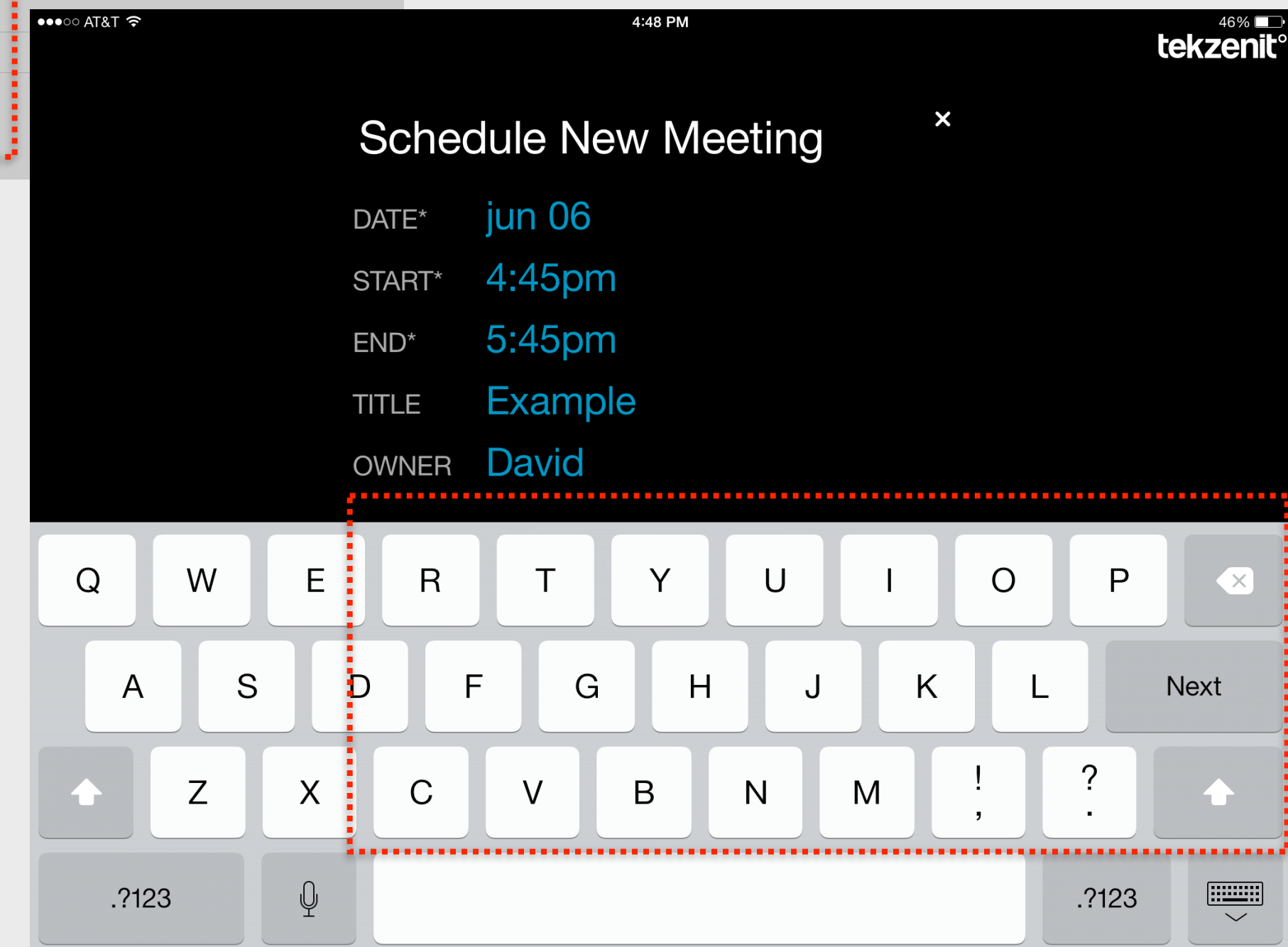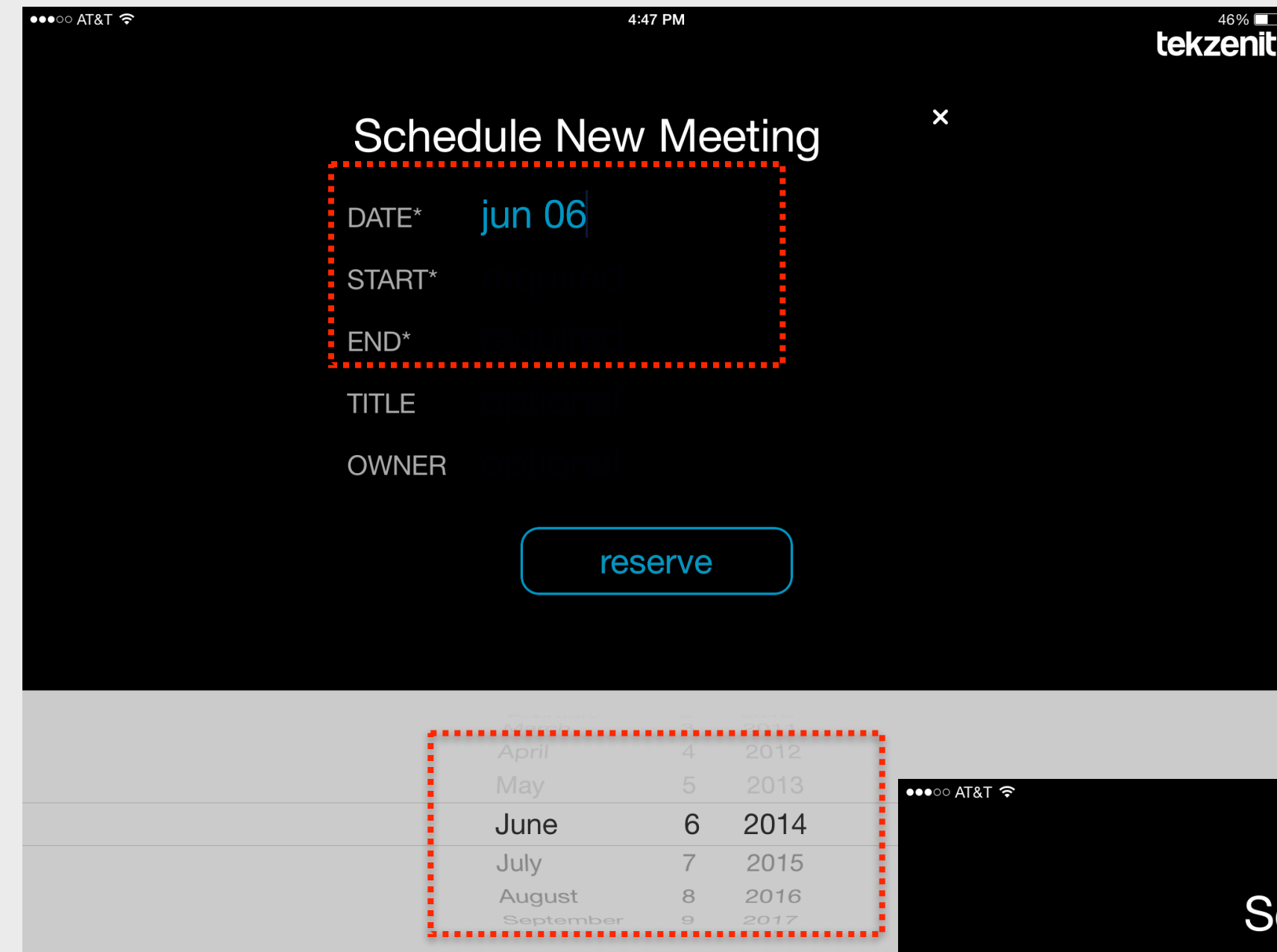
User Tasks and Observations
Results by Task

Task 1 – General Observations

"Approach the CRS interface, take a moment to look it over and comment on your general thoughts without interacting with it. "

negatives

People did not relate with the phrase "quick meeting". Many users were confused as to what exactly that meant, they didn't realize it meant "meet now".

One user complained that the kerning for "AVAILABLE" was off.

Several users did not understand that the arrows were a call to swipe up.

Some users thought that "Available" should be represented with green instead of blue.

The position of "see schedules" in the middle of the two buttons Quick meeting" and "reserve for later" confuses users as they associate it with the time of the next meeting.

Some users thought it was hard to see the current time.

Some users thought that the time up to the next meeting should be bolder than the "conference room" text.

About half of the users though the contrast made it difficult to read everything, and requested to do the user test in the dark.

One user mentioned that everything was text and there was no graphical representation of availability.

Some users would prefer to see the entire day's schedule on the home screen.

The hierarchy of the content confused some users.

The user was not confident as to what would be displayed on the home page if the next scheduled appointment was tomorrow.

positives

People thought the "Available" message was clear.

The calls to action were "clean-looking".

average time to complete

not applicable

success rate

not applicable

Task 2 – Schedule a Meeting

"You want to schedule a meeting (Condition: day, week, month in the future; include conditions where the user has to scroll to find an open slot to schedule)."

observations

To proceed with this task one person chose "see schedules", one person chose "reserve for later", and three people tried using "quick meeting".

After scheduling the meeting through quick meeting, the home screen appears with the status "In Use". This created the following issues:

- One user wasn't aware that he was scheduling a meeting for right now.

- One user felt that this was a warning and that they had intervened on an ongoing meeting. (because of the red)

- One user wasn't sure if the "In Use" was for their meeting or an existing meeting.

- Users were also looking for a confirmation message after shucking through "quick meeting".

One person completed this task by using "reserve for later". After clicking the day view, they continuously tried to schedule a meeting by tapping on the day/time slot, but it did do anything. They eventually scheduled through the [+] button, but pointed that it was hard to see.

When the user tried to confirm the meeting, they had trouble finding the "Reserve" button, due to the keyboard blocking it. They tried hitting outside in the black area to remove the keyboard, and eventually they decided on hitting the "x" button, assuming that they had finished.

The research team noticed that if you take too long to schedule a meeting, the app will kick you back to the home page, even if you are halfway through the process of scheduling and even if you are interacting with the app. The time out period should be affected by the last screen touch, but it isn't.

average time to complete

1:42 seconds

success rate

40%

Task 3 – Schedule a Meeting Quickly

"You walk up to the CRS interface with a group of people and notice the conference room is empty. You want to input that you're taking the conference for a meeting that starts now so no one else will disturb you."

observations

Almost all the users used the "quick meeting" button, however, several users did not know if quick meeting meant "meet now". One user completed the task by using the quick meeting button but was not sure if they had done it correctly.

average time to complete

0:23 seconds

success rate

80%

Task 4 – Find a Meeting

"You want to find a meeting (Condition: day, week, month in the future; include conditions where the user has to scroll to find an open slot to schedule) and cancel it."

observations

To proceed with this task, most users went to "see schedules".

The upward arrow did not covey to users that they should swipe up. Many users had trouble getting the gesture to work correctly.

After successfully swiping the panel up, some users stayed on the default list view and had the following observations:

- Users said that the right side was visually heavy due to the stacked buttons.

- Users said that it was good that the reserved time slots were highlighted.

- On user said that the cancel buttons were "demanding a lot of attention".

- On the list view, people were looking for filters and search bars to find names and meetings.

Other users tried clicking through to the week and day view and had the following observations:

- Using the week view, users tapped on the sideways arrow buttons to try and move to the next week. They were not functional however.

- In the week view, users wanted to click on a meeting to cancel it, but this was not possible.

average time to complete

1:21 seconds

success rate

40%

Task 5 – Schedule a Recurring Meeting

"You want to schedule a repeating meeting."

observations

Most users attempted to create a recurring meeting by going to "schedule new meeting" form by clicking the [+] button. They were disappointed and frustrated to see that this functionality was not available.

Users commented that if the functionality was available, they would expect it to give them options like weekly, daily, monthly, etc.

average time to complete

1:16 seconds

success rate

0%

Task 6 – Search for a Meeting

"You want to search for a meeting scheduled by <person> during the week of <date>. You don't find it, so search for it two weeks in the future."

observations

As users began to try and complete this task, many looked for a search or filter function.

Users switched between the weekly and monthly view, continuously looking for a search function.

When they could not find this, they eventually decided on either the list view or the weekly view. (some users tried the monthly view but there was no useful information related to this task)

Some users wanted to see not only the coordinator, but also the participants attending a meeting.

Many users expected to be able to see the individual scheduled meetings in the month view, some users suggested making the percentages smaller to allow more important information to be displayed.

One user completed the task, but did not realize the actual date of the meeting. She did not realize that she was looking at a date two weeks in the future when she found the meeting.

average time to complete

1:44 seconds

success rate

20%

Task 7 & 8 – Find the Busiest Day/Least Busy Day

7 – "You want to schedule a meeting sometime in the <month>. Tell us what the worst day to try to do so."

8 – "You want to schedule a meeting sometime during the week but you don't know the exact date that will be required. Tell us what the best day would be to schedule a meeting in that week. "

observations

All users instinctively clicked on the month tab to see how busy the month was in general.

Most users told the moderator what the busiest day was, but then changed their mind afterwards. They commented that they changed their mind because it was too difficult to see at a glance which day was the busiest.

Only one user understood why some days were grayed out (because they had already passed).

Several users thought that if the percentages were color coded it would increase the page's immediate readability and their ability to gather important info at a glance.

One user said their focus was immediately brought to the center of the screen which made scanning for the info they needed somewhat difficult.

One user thought that instead of circles with percentages that something else should be use, like a loading bar or something else that gives a better sense of occupancy. They also emphasized the use of color to distinguish busy days from more free days.

The days for the next month were black while the days for this month were a dark shade of gray. This made the upcoming days easier to read than the current days.

Most users tried swiping left and right but this was impossible. It took most of the users quite some time to figure out that they needed to swipe up and down. There is no indicator that they should swipe up and down.

Almost all the users tried tapping on the arrows to progress through the monthly view, but they did not work.

There is a very noticeable delay when swiping between months, which confused many users. General interaction was not smooth.

average time to complete

7 - 0:50 seconds

8 - 0:26 seconds

success rate

7 - 60%

8 - 80%

Task 9 – Schedule a Meeting for Next Month

While looking at the <month> schedule you want to schedule a meeting on <date during the following month>. Show us how'd you do that.

observations

In order to accomplish this task, some users went straight to the monthly, view while some went to the weekly view and started swiping, and some went straight to the reserve a meeting view [+].

From the Monthly view, several users clicked through to the daily view, and then used the [+] button on that page to create a meeting. These users were disappointed to see that the app did not autofill the meeting day with the currently selected day (no matter how you get to the "schedule new meeting" view, the date is always the current date). Some users did not realize that they were on the wrong day, and when it was pointed out to them, several users said this was "dangerous" and would result in many incorrectly scheduled appointments.

Add a meeting appears only next to an existing meeting, which frustrated users. Users should be able to click anywhere in the day view to begin creating a meeting with the appropriate date and time autofilled.

Task 10 – Find the List View

"You want to see a complete list of all meetings currently scheduled for the conference room. Show us how'd you do that."

average time to complete

0:37 seconds

success rate

60%

observations

Most users has no issues finding the list view, BUT most users were not happy with the icon for the list view. The layout also made them unsure of whether or not they were in the list view. Many users said that they were not confident that they were in the "All Meetings" list view because there was no indication of that on the page.

Many users said that the list view would be more helpful if it was broken down into weeks. (more descriptive labels that told the user what week they were looking at)

A few users did actually like this screen.

Task 11 – End a Meeting Early

"Your meeting finished early so you want to free up that time on the CRS application so someone else, if they need to, can use the conference room."

<u>average time to complete</u>

0:01 seconds

<u>success rate</u>

100%

<u>observations</u>

All users quickly and easily ended the meeting by hitting "end meeting".

User Tasks and Observations
Results by UI Screen

Home (Default) Screen

problems

A - The status bar should be hidden completely, it is unnecessary and reminds the user that they are using an iPad. (it should be a full-screen app)

B - The current time is too small, and should be moved to somewhere where it is more easily visible. (out of the status bar, most likely in the top-center)

C - The word "AVAILABLE" has a bad kerning (look at the "L and the "A") and it should be fixed.

D - "quick meeting" is not a descriptive enough call-to-action and should be replaced with the phrase "meet now".

E - The arrow for "see schedules" is not clear, it should be switched to an upward "V" shape. (preferably one with a gloss that suggests it is draggable - see the iOS lockscreen)

F - the see schedules draggable hot spot is too small, and it does not provide visual feedback as the user begins dragging. It is extremely difficult to swipe up on first try.

G - "The next meeting is at ___" works, but it does not tell me how much time is left until the next meeting. There are no warnings/indicator that a user should not schedule a "quick meeting" soon if a conference is about to start. (this could be possibly fixed by making the current time bigger)

H - "AVAILABLE" is blue and "IN USE" is red, which don't really contrast enough. Users expect that when something is available it will be green.
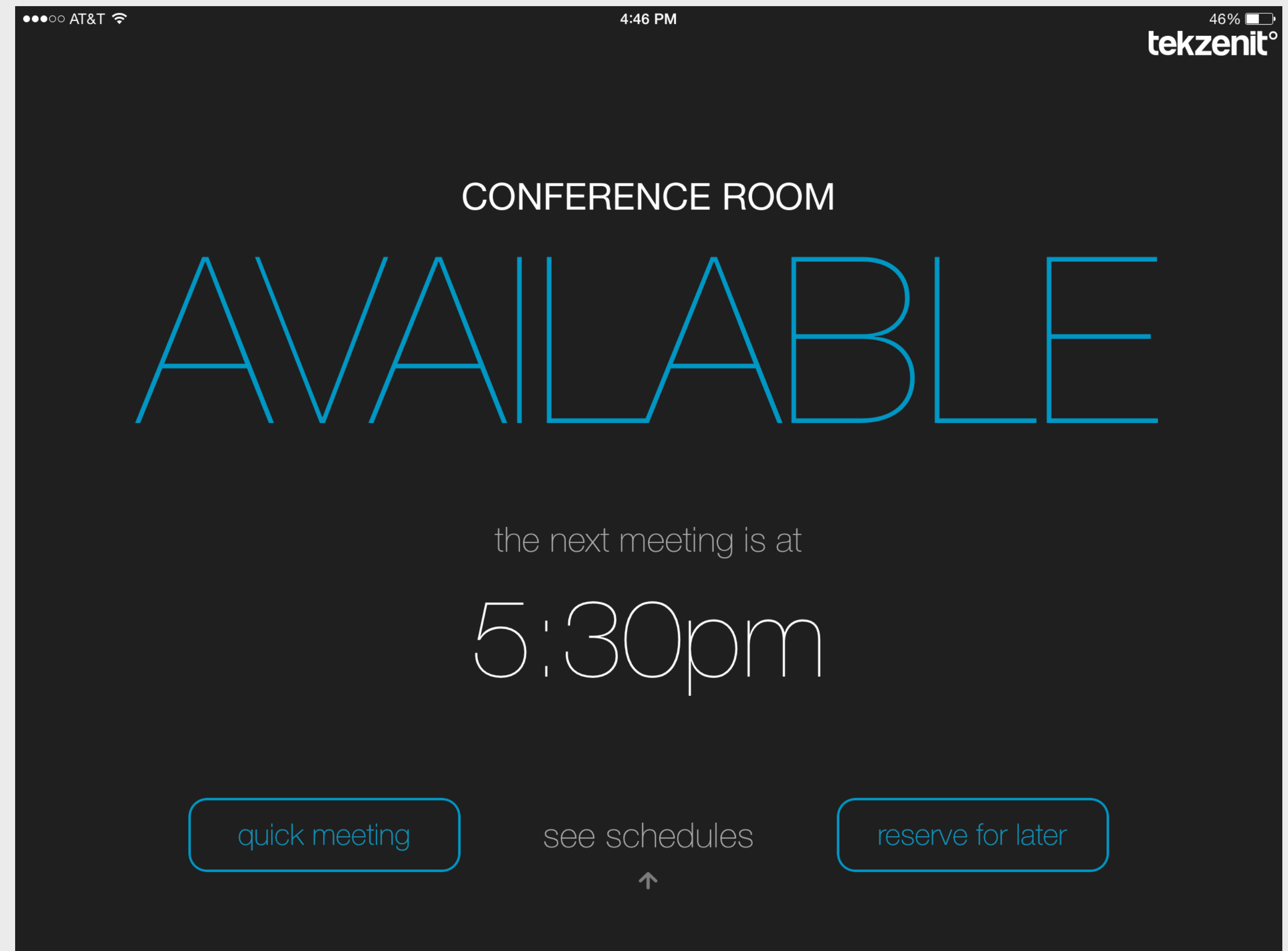
Navigation Bar

problems

A - Incredibly difficult to swipe.

B - The arrows should be changed to "V"s to be clearer.

C - There is currently no feedback to indicate if I am correctly dragging the nav bar down, there needs to be realtime feedback when a user begins dragging the bar down.

D - The icons need to be more legible.

E - "Viewing elements" are grouped with "doing elements" (the [+]), the [+] should be separated from the viewing elements.

F - The [+] is not centered.

G - The buttons turn completely white when held down - text should still be visible.

H - The buttons may be too close together, and the list view is too small.

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≣ DAY   WEEK   MONTH   +   ↓ CONFERENCE ROOM ↓   tekzenit°
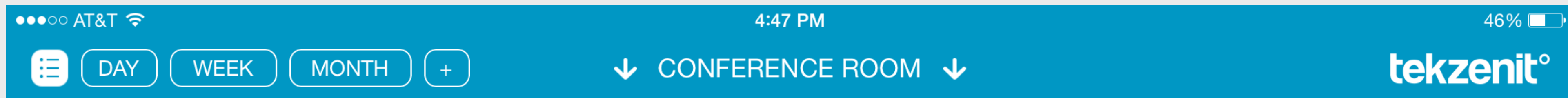
Schedule New Meeting Form

problems

A - The month abbreviations are not necessary with so much space available. The months should be capitalized as well.

B - The date always falls on the current day even when you enter this screen from within a specific day/month.

C - The time selectors do not restrict the user from selecting times that are impossible or illogical. (End time cannot be before start time, user should not be able to select a time 20 years from now)

D - Times should not be displayed that are already scheduled.

E - The app shows a cursor and allows the user to move the cursor even though there is no keyboard (on the time selectors)

F - Title and owner are not automatically capitalized.

G - The keyboard obscures the reserve button and cannot be hidden by tapping in empty space or by trying to drag it down with a finger. You MUST hit either "Next" or the shrink keyboard button.
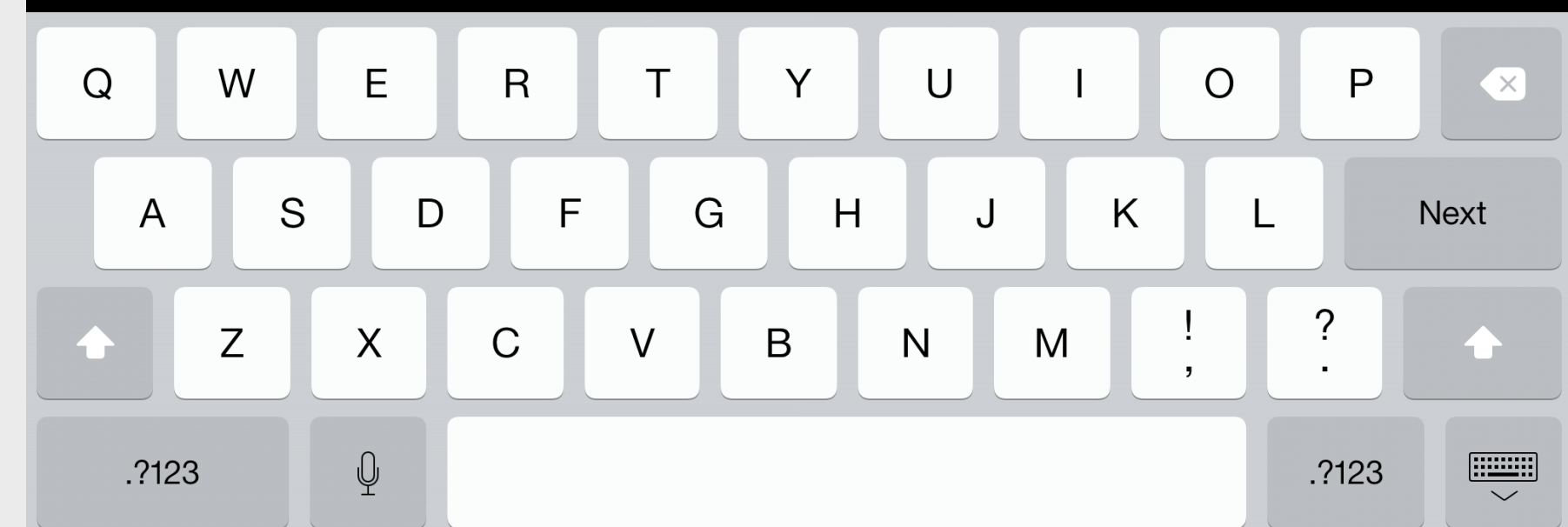
List View

problems

A - There is no way to edit a meeting, you have to completely delete the meeting and re-create it.

B - There is no filtering/search mechanism to find meetings quickly based on who scheduled the meeting or what the meeting is about.

C - When scrolling through all the meetings, it should be clearer as to what week I'm currently looking at.

D - The first day is in all caps while the rest are not. (inconsistent)

E - If you scroll to the very bottom, half of the last meeting is cut off.

F - There is no title text that explains that the user is looking at all the future scheduled meetings.

G - The stacked cancel buttons look visually "heavy". Consider an edit button.

Month View

problems

A - The visuals do not adequately convey the occupancy rate.

B - The actual percentage is hard to see due to the color contrast, the date number stands out more than the percentage.

C - The days for the upcoming month are actually more visible than the days for the currently selected month.

D - The cells that contain the percentages and day of the month are visually cluttered, and causes discernment problems. (This makes it difficult to get information at a glance.)
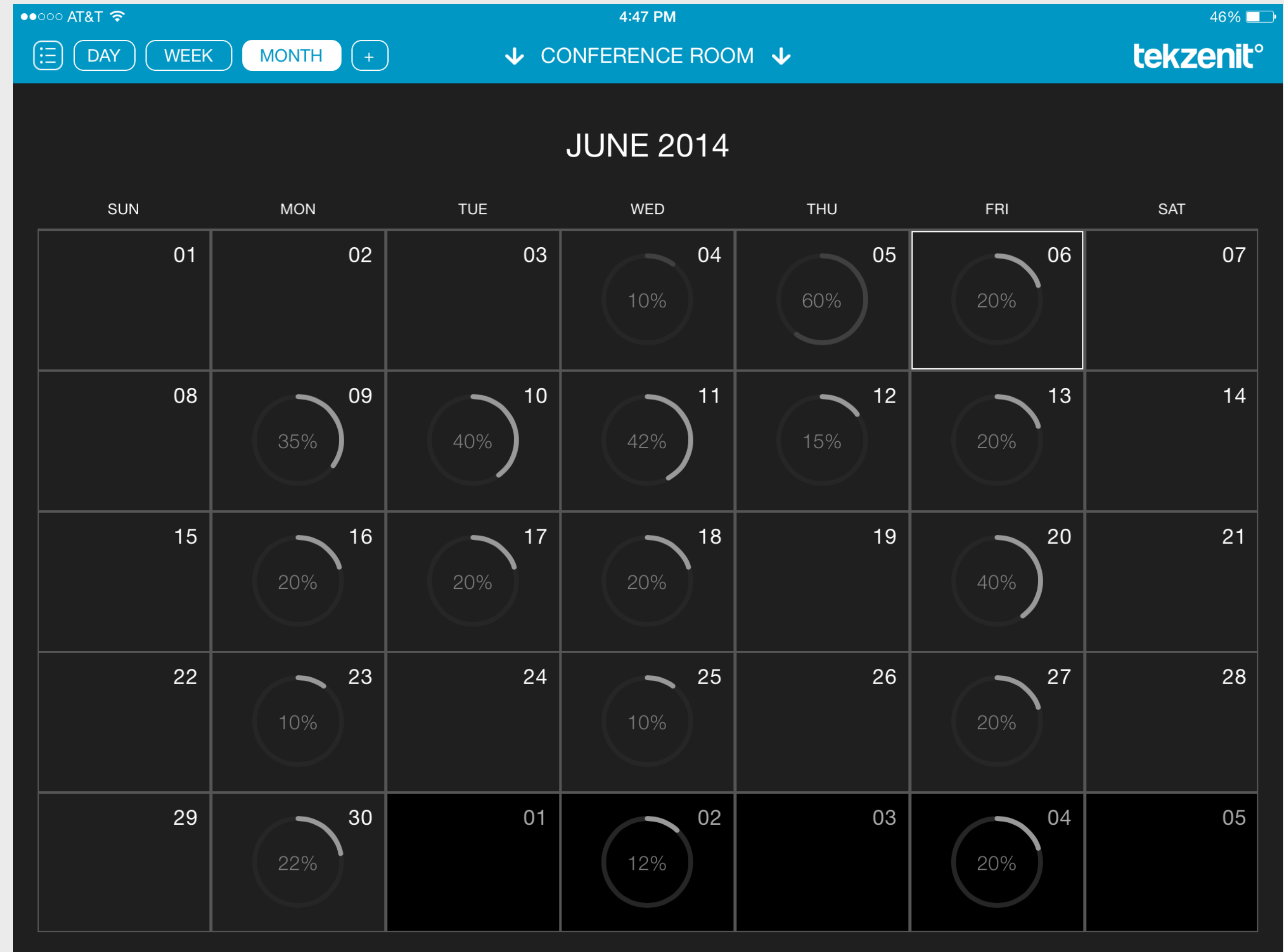
Week View

problems

A - The arrows next to the current month are not tappable, you are forced to swipe. The arrows indicate tap-ability, and not swipe-ability.

B - The weekly view is sluggish, and swiping between weeks takes too long to update.

C - Tapping on a cell does not allow the user to begin scheduling a meeting for that day.

D - The blue [+] buttons work, but they do not autofill the scheduled date with the appropriate date. (they use the current date instead of the date the [+] is in)

E - The description text does not wrap correctly in the cell.

F - Tapping on a day's row will not take me to that day's view.
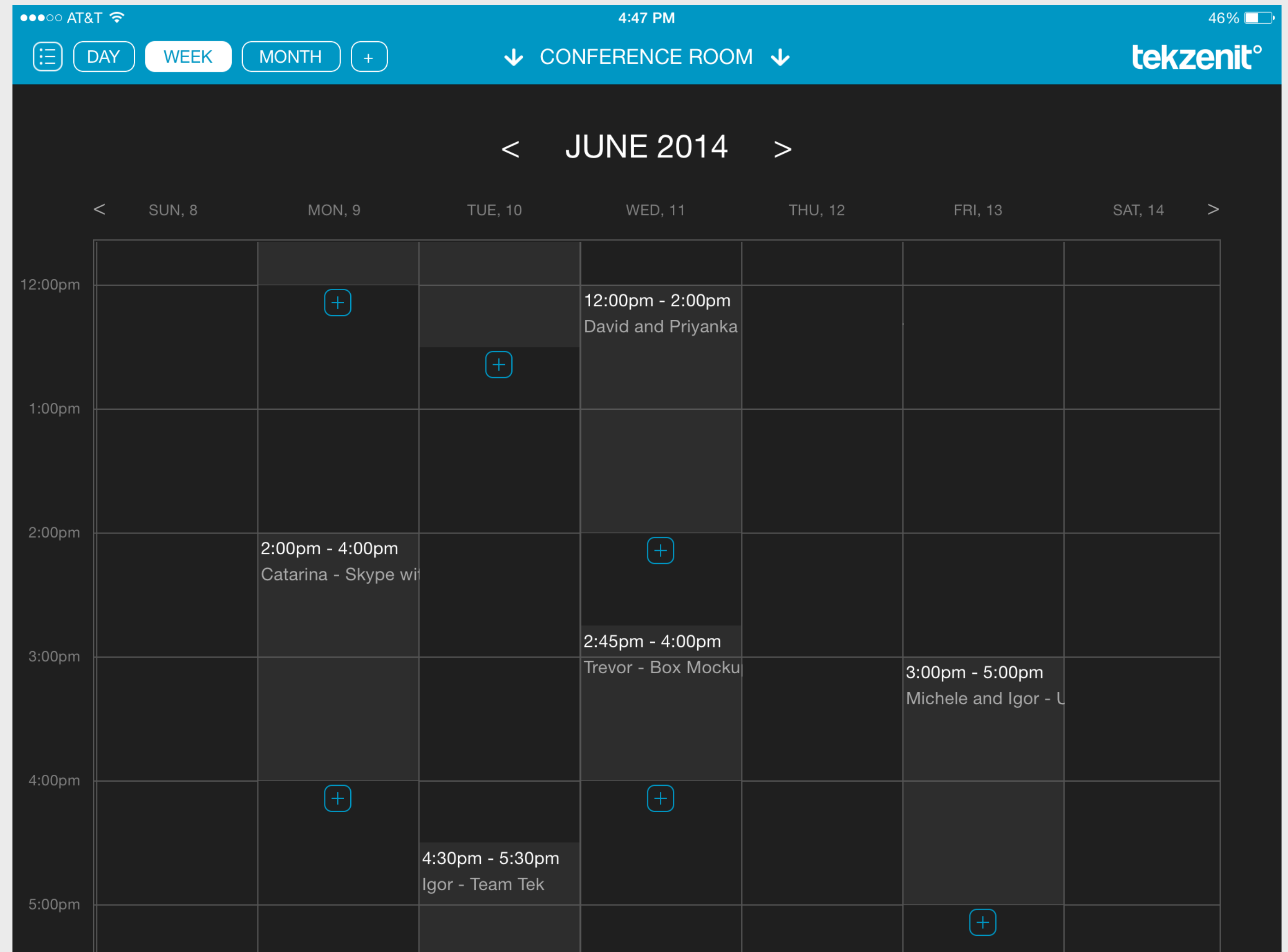
Day View

problems

A - I cannot click anywhere to begin adding a meeting at that time.

B - Tapping on an existing meeting does not provide me with the meeting details.

C - There is no way to edit a meeting, you have to completely delete the meeting and re-create it.

D - Clicking on "ADD MEETING +" takes me to the "schedule a meeting" page but it does not autofill the approbate date and time.

E - The arrows are not tappable, you are forced to swipe.

F - Swiping through each day is sluggish.