CLAIMS

What is claimed is:

1. A wellbore fluid communication tool, the tool comprising:

a housing having a central passage therethrough along a longitudinal axis, the housing including at least one radial port;

a seal assembly disposed along the central passage and adjacent to the radial port;

an outer sleeve assembly disposed within the housing along the central passage, the sleeve assembly having first and second doors abutting one another to define a door gap, the door gap initially positioned upstream of the seal assembly;

an inner mandrel having a radial orifice, the inner mandrel being operable to selectively engage the outer sleeve assembly by a plurality of grooves and a lower mandrel shoulder disposed on an outer profile of the inner mandrel; and

a first seat assembly disposed within the outer sleeve assembly and coupled to the inner mandrel;

wherein first and second doors are operable to selectively facilitate fluid communication between the central passage and a location external to the housing.

2. The wellbore fluid communication tool of claim 1, further comprising an intermediate housing ring releasably secured to the housing and spaced apart from a shoulder defined on the outer sleeve.

3. The wellbore fluid communication tool of claim 2, wherein the housing further comprises a first releasable locking mechanism disposed to lock the housing and outer sleeve to one another and a second releasable locking mechanism disposed to lock the intermediate housing ring to the housing.

4. The wellbore fluid communication tool of claim 1, wherein the seal assembly further comprises a first housing port seal and a second housing port seal, which are disposed on opposing sides of the radial port.

5. The wellbore fluid communication tool of claim 1, wherein the outer sleeve assembly further includes a first sleeve collar and a second sleeve collar, which are positioned below the first door and the second door.

6. The wellbore fluid communication tool of claim 5, wherein the second sleeve collar is affixed to the housing.

7. The wellbore fluid communication tool of claim 5, wherein the first sleeve collar is slidably disposed about the inner mandrel below the second door and above the second sleeve collar.

8. The wellbore fluid communication tool of claim 1, wherein the outer sleeve assembly further comprises a plurality of lugs that are operable to selectively engage the plurality of grooves and the lower mandrel shoulder of the inner mandrel.

9. The wellbore fluid communication tool of claim 1, further comprising a second seat assembly disposed within the inner mandrel near the lower mandrel shoulder.

10. A wellbore fluid communication tool, the tool comprising:

a housing having a central passage therethrough extending between a first end and a second end and defined along a longitudinal axis, the housing including at least one radial port;

a seal assembly disposed along the housing along the central passage between the radial port and the first end of the housing;

an outer sleeve assembly disposed within the housing along the central passage, the sleeve assembly having first and second doors abutting one another to define a door gap, the door gap positioned between the seal assembly and the first end of the housing when the first and second doors are in a first closed position;

an inner mandrel having a radial orifice, the inner mandrel disposed within the outer sleeve assembly so that the radial orifice is adjacent the door gap, the inner mandrel having a plurality of grooves defined therealong;

a first releasable locking mechanism securing the outer sleeve assembly to the housing in the first locked position;

a first releasable attachment mechanism extending from the outer sleeve assembly to engage a groove of the inner mandrel to securing the inner mandrel to the outer sleeve assembly in the first position; and

a first seat assembly disposed within the outer sleeve assembly and coupled to the inner mandrel,

the outer sleeve assembly and the inner mandrel slidable within the housing to a second position when the first releasable locking mechanism is released.

11. The wellbore fluid communication tool of claim 10, wherein the outer sleeve assembly includes a shoulder and the wellbore fluid communication tool further comprises an intermediate housing ring secured to the housing by a second releasable locking mechanism, the housing ring spaced apart from the outer sleeve shoulder when the tool is in the first position.

12. The wellbore fluid communication tool of claim 10, wherein the first releasable locking mechanism is a shear pin.

13. The wellbore fluid communication tool of claim 10, wherein the ~~a~~ seal assembly is disposed along the housing on opposing sides of the radial port.

14. The wellbore fluid communication tool of claim 10, wherein the outer sleeve assembly further includes a first sleeve collar and a second sleeve collar which are positioned below the first door and the second door.

15. A method for conducting cementing operations in a wellbore, the method comprising:

positioning a cementing tool in a wellbore at a first location spaced apart from a second location that is downstream of the first location;

conducting cementing operations at the second location;

following the cementing operations at the second location, applying a first pressure to the cementing tool to collectively translate substantially abutting first and second doors together such that a door gap defined between the first and second doors is translated in a closed configuration across a seal of the cementing tool;

applying a second pressure to the cementing tool to (i) align an orifice in an inner mandrel of the cementing tool disposed radially within the first and second doors with a port in a housing of the cementing tool disposed radially outside the first and second doors and (ii) subsequent to collectively translating the first and second doors in a closed configuration across the seal, individually translate the second door away from the first door, thereby establishing fluid communication between the orifice and the port; and

conducting cementing operations at the second location through the orifice, between the first and second doors and through the port.

16. The method of claim 15, wherein cementing operations at the second location comprises directing cementing fluids through the aligned orifice and port in order to deliver cementing fluids to an annulus about the cementing tool.

17. The method of claim 15, wherein the first pressure is applied by landing an object on a seat within the cementing tool and applying pressure to the object until a shear mechanism ruptures, allowing the first and second doors to collectively translate.

18. The method of claim 15, wherein conducting cementing operations at the second location comprises driving the landed object from a seat and passing cementing fluids through the seat to the aligned orifice and port.

19. A method for establishing fluid communication in a wellbore comprising:

positioning a wellbore fluid communication tool in a wellbore, the wellbore fluid communication tool including a tubular housing having a radial port defined therein, an inner mandrel disposed radially within the housing and defining a radial orifice therein and a sleeve including first and second doors disposed radially between the tubular housing and the inner mandrel;

applying a first pressure to the tool to collectively translate ~~substantially abutting~~ the first and second doors of the tool such that a door gap defined between the first and second doors is translated in a closed configuration across a seal; and

applying a second pressure to wellbore fluid communication tool to (i) align ~~an outer~~ the orifice ~~of the tool~~ with ~~an inner~~ the port ~~of the tool~~ and (ii) move the second door away from the first door, thereby establishing fluid communication between the orifice and the port through the door gap in an open configuration.

20. The method of claim 19, wherein the first pressure is applied by landing an object in a seat of the tool and applying the first pressure to the object until a shear pin release the first and second doors from a first closed position, allowing the doors to collectively translate to a second closed position.