Ancillary Service Models

		RTO-Coordinated Control Area Operations Model	Single Control Area	Avista Proposal (Balancing Authorities)
1.	**What IOS should be acquired and what AS should be sold?** **See attached table.**			All IOS and AS in #1 and #2 and Supplemental Energy and Balancing Energy in #3 should be sold and/or self supplied by generators and purchased and/or self supplied by a LSE on behalf of load. A BA will likely be a LSE, but may serve as the BA for other LSE's. The RTO's role should be minimized. See below for supplier of last resort compliance. At most the RTO should host an open market place, but it should not run an auction market for any of the above. Congestion redispatch should be divided into Emergency redispatch for security reasons and Commercial redispatch for economic congestion. The RTO and BA's should have non-discriminating contractual arrangements with all generation permitting emergency redispatch at the generator's actual cost (including where appropriate actual lost sales or contract damages), such costs to be socialized across the RTO or BA as appropriate. Commercial redispatch for congestion management should be acquired by the RTO, or ITC (where appropriate), on a market price basis with the costs to be borne by the direct beneficiaries of the congestion clearing.

2.	**Who?**			
2.1.	Who defines requirements for IOS and AS?			
2.1.1.	Quantity/Capacity	The RTO defines these requirements for all five of the IOS Groups and all five of the AS Groups. The RTO posts these requirements on the RTO website well in advance (weeks or more) of the Operating Day.	RTO (All Product Groups)	NERC ultimately defines the requirements for all IOS and AS products that affect reliability (Regulation, Load Following and Balancing). NAERO passes them down to WSCC who passes them to the RTO who passes them to each BA. WSCC or the RTO can define what is required in each BA as long as it meets or exceeds NERC requirements.
2.1.2.	Location (if applicable)	The RTO defines these requirements for all five of the IOS Groups and all five of the AS Groups. The RTO posts these requirements on the RTO website well in advance (weeks or more) of the Operating Day.	RTO (All Product Groups)	WSSC to RTO to BA to LSE (if different from BA) for Reserves. BA controls adequacy of others.
2.1.3.	Technical (certification, response time, metering, telecommunica-tions, etc.)	The RTO defines these requirements for all five of the IOS Groups and all five of the AS Groups. The RTO posts these requirements on the RTO website well in advance (months or years) of the Operating Day.	RTO (All Product Groups)	Contractually set in either Generating Integration Agreement between generator and RTO or Load Integration Agreement between the Transmission Provider (either RTO or ITC) and BA.
2.2.	Who procures IOS inputs?			
2.2.1.	"Normal" market	For categories 1-3: SCs would acquire IOS resources (by being designated as the SC responsible for such resources and/or by acquiring from other SCs the rights to schedule such resources (through inter-SC trades of such resources made bilaterally or through	Assuming a Scheduling Coordinator (SC) concept, SCs would source IOS inputs from their own resources or purchase them from 3rd Parties (bilateral or private exchanges) for self supply. Those inputs would then be turned over to the RTO. The RTO would then	LSE (may be a BA, may acquire from or through a BA) It is the Loads obligation to obtain these services. They could be obtained from their own resources (i.e. a G&D company - self

		private exchanges), and would turn over to the RTO the authority to request the dispatch of such resources. This is known as "self-provision." (Note that throughout the description of this model, "resources" means any resource - both supply side or demand-side - which meets the RTO's technical requirements.) The RTO would then determine whether it is required to procure additional IOS resources in its role as the AS "provider of last resort" (PLR), and would acquire such resources by purchasing them from external-to-the-RTO ancillary services exchanges. For categories 4-5: because these are acquired through longer-term contracts or other longer-term commitments, and because generators and demands can change their SCs on short notice, the longer-term contractual commitments are made directly (without intervention of an SC) between the generator/demand and the RTO.	determine whether it is required to procure additional inputs as the market of last resort. (Groups 1-3)	provides) or purchase them from 3rd Parties (bilateral market) Those inputs would then be turned over to the BA (G&D could be its own BA).
2.2.2.	Market of last resort?	Because 2.2.2 is an alternative to 2.2.1 ("normal" markets), we assume 2.2.2 to refer to procurement of IOS in "abnormal or unusual situations" rather than the procurement of IOS as "provider of last resort during normal operations" (which is addressed in 2.2.1. These abnormal or unusual situations would occur because of contingencies (loss of IOS	The RTO or its agent (All Groups)	See Avista Ancillary Services and Control Area papers. Existing transmission providers (or their successor if the ITC) continue to make available at cost-based-rates to loads in respective ECAs. Generation offers at market rates in bilateral market. The fall back is that all existing Native Load customers can obtain these service from there present ECA at the existing cost based rate or

		resources, loss of transmission capacity that is used to deliver IOS resources…) or unanticipated situations (e.g., real-time demand far in excess of what was anticipated by the RTO prior to real-time). In such situations, the RTO would: (i) if time permits, allow SCs to procure and offer additional IOS resources to the RTO; (ii) procure IOS resources through the external-to-the-RTO ancillary services exchanges, and/or (iii) as a last resort, exercise its backstop authority to command SCs to provide IOS resources to the RTO to avert an imminent grid security problem.		acquire on a bilateral market. On day One the service would be provided under the existing cost based rate and eventually move to a bilateral market.
2.2.3.	Who sets the price?	For Groups 1-3: for self-provided IOS resources, the capacity prices (i.e., the prices for the "capacity call options") of the resources are determined in private exchanges and/or through bilateral arrangements, and the RTO would neither know nor care about such prices. The energy prices of such resources (i.e., the "strike prices" at which the IOS resources would be dispatched) would be provided to the RTO by the SCs who self-provided the IOS resources. For non-self-provided resources (i.e., those acquired by the RTO through the external-to-the-RTO ancillary services exchanges): the capacity prices and energy strike prices are determined in the exchange. The capacity costs (plus the RTO's transaction costs for procuring the resources, including any associated software	• Self-Provision would have no capacity price as far as the RTO is concerned; private exchanges and/or bilateral arrangements would determine the costs associated with trading the inputs. (Groups 1-3) • In the market of last resort the RTO (or its agent) would determine the price based on the cost of services procured and transaction costs. (Groups 1-3)	See 2.2.2. Every load will have a cost based product available from historic or franchised supplier and every load can substitute by self supply or through bilateral purchase from other generation suppliers. The question implies an exchange market. Avista thinks this is inappropriate in the Northwest and the price should be determined on a bilateral market.

		development and hardware costs) will be allocated to those SCs who are deemed to be responsible for the RTO's procurement. For Groups 4-5: the capacity prices are determined by the RTO through the RTO's longer-term procurement processes and/or other contracts. The associated costs are allocated to all SCs on a pro rata basis (e.g., pro rata to each SCs actual demand plus exports).		
2.2.4.	Who develops an imbalance price and how?	From the IOS resources procured as described above, the RTO will create "stacks" of available sources of Balancing Energy. The RTO will create a "Balancing Energy stack" for each congestion zone, comprising IOS resources that are located in the congestion zone and resources outside the zone with FTRs which in effect provide the IOS resource with access to the zone. As Balancing Energy is needed (and/or as residual congestion is cleared by the RTO) the cheapest resources in that stack are called upon, and the final resource that was dispatched in that zone will set the Balancing Energy price for that interval. (Note: there are many details to address, including duration of the interval - e.g. 10 minutes - and pricing and payment during intervals in which resources may be both incremented and decremented.)	The RTO or its agent would develop "stacks" of available sources of imbalance energy by congestion zone (resources in the zone or resources outside the zone with FTR access to the zone). As imbalance energy is needed the cheapest resources in that stack are called upon with the final resource in that zone setting the price for that interval.	BA for imbalances inside its ACE. (This is a contractual issue between the BA and the Load). RTO for BA to BA imbalances. Should be determined on hourly market basis to avoid abuse
2.3.	Who creates the day-ahead IOS operating plan?	The RTO will develop the day-ahead operating plan for the entire RTO grid. This includes the	The RTO would determine the order of the resource stacks and the availability of inputs.	The individual BAs are responsible to have their Loads and Resources balance. The BAs

		day-ahead IOS operating plan, which determines Balancing Energy stacks that will be used for the dispatch of AS. The RTO will update the operating plan as system conditions change between day-ahead and real-time, based on input provided from the ECAs.		report to the ITC (if applicable) or to the RTO. (assume operating plan means plan for meeting load with appropriated generation) The RTO operates the grid but does not have control over the generation. The BA has authority over the generation in its area.
2.4.	Who determines which IOS inputs will be deployed?	In the RTO-Coordinated Control Area Model, the RTO, ECAs and SCs jointly deploy the IOS resources, as follows: 1. Under normal situations, the RTO and ECAs agree on the intra-hour ramping requirements for each of the Congestion Zones and ECAs. (Because the boundaries of Congestion Zones and ECAs are not the same, this requires coordination by the RTO, to ensure that flowgates and other branches in the network would not be overloaded.) 2. The RTO determines which resources should be ramped, using its knowledge of: (i) the requirements for each Congestion Zone and ECA, and (ii) the costs of the resources in each of the Balancing Energy stacks. The RTO may choose to: (i) issue orders to ramp resources within an ECA, and/or (ii) create inter-ECA dynamic schedules which it will telemeter to each of the ECAs. In this way, the RTO ensures efficient coordination between the ECAs, ensures that system constraints are met, and ensures that each ECA	The RTO	Generally will be the BA. RTO role should be limited to system security matters and its direct deployment will generally only be in emergencies The BA will work out the congestion problems and flowgate issues in its area.

		receives - through actual ramping of IOS resources and/or through schedules from other ECAs - the energy needed to keep each ECA's Area Control Error (ACE) within NERC performance standards. To the ECA, the RTO simply appears to be a large GCC, to which the ECA submits its ramping request. The RTO's GCC then complies with the request by dispatching generation within its portfolio (just as would happen today by the operator of a GCC) *and* by arranging for dynamic schedules between the ECAs. 3. The RTO contacts the SCs whose IOS resources are to be ramped. These SCs are responsible for implementing the ramps through their GCCs. (Note that the SCs are contractually-obligated to do this in a timely fashion, consistent with the technical requirements that have been specified for the IOS resources. But in any case, the SCs are "in-the-loop," just as the generation resource schedulers today are in-the-loop to ensure the efficient management of their resources.) 4. For shorter-time frame response (i.e., the use of Regulation IOS), the same process is used as described above, except that instead of sending the Direct Digital Control (DDC) signals from the ECA to the computer system of the local GCC (i.e., the pre-RTO approach),		

		the DDC signals are sent electronically from the ECA to the RTO's real-time computer , where they are automatically processed and: (i) distributed to the GCCs of the appropriate SCs, and/or (ii) result in the creation of real-time dynamic schedules which are sent back to the ECA computers. This hierarchical control concept: (i) allows the existing ECA computer systems to continue to be used; (ii) allows multiple SCs to compete to provide IOS to each Congestion Zone without fear of discrimination; (iii) allows the ECAs to deal with multiple GCCs (something that they would have to do as soon as a single IPP entered the market for IOS); (iv) creates efficient coordination between all ECAs; (v) allows each ECA to maintain its ACE requirements in compliance with NERC CPS; and (vi) leaves with each SC the control that it needs to manage its portfolio of resources (just as resource owners have today). Implementation will, of course, require the definition of redundant systems and fallbacks in the event of loss of telemetry. 5. In the event of *abnormal conditions* - e.g., contingencies requiring the dispatch of reserves - the ECA (which would remain responsible for real-time monitoring of grid conditions) will contact the RTO, which will deploy the appropriate resources from the Balancing Energy stack.		

		6. For serious system emergencies, the ECAs will be given access to the Balancing Energy stacks and will be allowed to make deployment decisions, consistent with the emergency plans developed between the ECAs and the RTO (in its role as Security Coordinator for the grid).		
2.5.	Who deploys/dispatches the IOS inputs?	As described in 2.4 above, the ECAs that have not been folded into the RTO Control Area would request incremental and/or decremental energy from the RTO, which will provide such energy from IOS resources and/or inter-ECA dynamic schedules. The ECAs' communication will be through ACE signals (for Regulation), inter-computer ramping requests from the ECA to the RTO (for Load Following, Supplemental Energy, Voltage Support and elimination of congestion), and ECA-RTO computer or voice communication (for deployment of Spinning Reserves, Supplemental Reserves and Black Start capacity).	The RTO	Generally BA with RTO having emergency dispatch/redispatch authority for reliability purposes only.
2.6.	Who conducts the settlement function?	The RTO will settle with SCs for IOS capacity purchases by the RTO and for AS capacity costs charged to the SCs. The RTO will settle with SCs for Balancing Energy charges. Under this construct, there is no need for any settlement process between the ECAs and SCs (except possibly for paying for the embedded costs of the grid through the basic Grid Access Charge), or between ECAs, or between ECAs and the RTO, because the ECAs are never	The RTO: adapting to a market would require significant modifications to existing settlements systems, place a significant burden on market participants and inevitably lead to product and payment distortions.	Will often be a LSE to supplier contract or a BA or LSE self supply for Regulation, Load Following, Supplemental Energy and Reserves. Balancing inside a BA will be settled by the BA. RTO will settle BA to BA imbalances. BA or RTO, as appropriate will settle emergency redispatch costs. In a bilateral market theses settlement functions are only between two parties.

		purchasers or sellers of either capacity or energy. (Note: there are still settlements between the Participating TOs and the RTO for various other, non-Ancillary Services-related costs.) Also note that in any alternative approach, adapting the settlements systems of the Participating TOs to a market (e.g., allowing IPPs to sell IOS resources to multiple ECAs, allowing efficient real-time transactions between ECAs, handling of inadvertent energy between ECAs, pricing energy on a ten-minute basis rather than dealing with return of energy in like-time periods, etc.) would require significant modifications to existing settlements systems, would produce more burdens on all market participants (due to multiple and non-consistent settlements processes), and would inevitably lead to higher payments and economic distortions due to uncoordinated procurement of IOS resources and uncoordinated deployment of AS and Balancing Energy.		
2.7.	Who monitors performance and enforces penalties for noncompliance?	The RTO, in order to ensure that standardized products and performance standards are defined, to ensure that IOS providers deliver and perform to those standards, and to ensure that treatment of IOS providers will be consistent and non-discriminatory.	The RTO in order to ensure standardized products and treatment.	RTO, ITC and BA will all have a role in respective sphere of influence. RTO will be grid-wide

3.	**Structure**			
3.1.	What is the relationship between RTO and ECA?			
3.1.1.	Narrative description	The RTO procures IOS resources, coordinates the deployment of ancillary services, and is responsible for reliability as the Security Coordinator. ECAs that have not folded into the RTO's Control Area participate in the deployment of ancillary services as described above. From a technical perspective, this will require electronic links between the RTO and ECAs to communicate the real time status of the Operating Plan and to deploy resources through the RTO. From a contractual perspective, each ECA must in effect become an agent of the RTO, must take on a duty to the RTO to perform its grid operations role in the best interest of the RTO (rather than operate in the interest of the ECA's affiliated functions), and must require the ECA's employees to follow the same Code of Conduct as would apply to any RTO employee.	ECAs no longer exist. The RTO has a relationship with Generation Control Centers. Generation control centers have the ability adjust generation as needed to meet power, non-power and legal obligations, including those to the RTO.	RTO and/or ITC will have contractual relationship with nested BAs. On day-one BA's may mirror ECA's. Consolidation should occur when parties deem it to be economically advantageous to consolidate and as technology permits efficient consolidation and dynamic operation.
3.1.2.	Who is responsible for inter-RTO tie-line schedules?	The RTO will manage inter-RTO tie-lines, because (i) the RTO will manage RTO-wide ACE; (ii) the RTO will be the only scheduling entity in the RTO region; and (iii) the RTO is responsible for congestion management, and therefore for deratings and curtailments and to	The RTO.	RTO to RTO tie-lines is an RTO seams issue to be addressed at the RTO level.

		avoid confusion and conflicting instructions across such interfaces.		
3.1.3.	Who is responsible for intra-RTO tie-line schedules?	The RTO is responsible for validating SC schedules, determining the net schedule for each ECA, managing the stacks of IOS inputs that will deal with contingencies and imbalances over the intra-RTO tie-lines, and maintaining the inter-ECA dynamic schedules (as described above). As such the RTO is responsible for the intra-RTO tie-line "schedules." Note however, that such inter-ECA "schedules" have little meaning in the RTO context , as they are a vestige of the pre-RTO world of separate TOs. (Finally, to the extent that such "schedules" are necessary to avoid congestion, the RTOs congestion management processes will address that matter through the scheduling and curtailment of FTRs and through grid-wide redispatch.)	There are none. The RTO manages flowgates within the RTO.	BA to BA tie lines are what RTO schedules.
3.2.	When do RTO and ECA acquire IOS (timeline from day-ahead to real-time)?	For Groups 1-3 IOS and AS: • The RTO will forecast the requirements for the ancillary services that may be self-provided on a long-term forward basis and will provide these requirements to the marketplace through the RTO website, to promote SC self-provision. • Prior to the day-ahead prescheduling process, the RTO will adjust the forecast to reflect system conditions. The RTO could then either: (i) deem this forecast to be the self supply requirements and allow SCs an opportunity to self-provide additional IOS	For Groups 1-3 IOS and AS: • The RTO will forecast requirements for ancillary services that may be Self Provided on a forward basis to promote SC self provision. • Prior to preschedule the RTO will adjust the forecast to reflect system conditions (the RTO could then either deem this forecast to be the self supply requirements or base final requirements on actual load, there are pros and cons to each). • At preschedule the SC will submit schedules and self provision commitments	Not clear anything needs to change? The BA (or ECA) will procure these products just like they do today. If the BA is a G&D it happens on real time.

		resources, or (ii) base final ancillary services requirements on the original per-unit forecasts and actual load. (There are pros and cons to each.) • Through the day-ahead prescheduling process, the SCs will submit schedules and self-provision commitments to the RTO. • The RTO will procure the difference between the amounts self provided and the RTO's forecast, as described earlier. • In the post-day-ahead scheduling process, SCs may submit additional schedules, provided that they also self-provide the associated IOU resources. • Throughout the period between the close of the day-ahead scheduling process and real-time, the RTO will update its IOS requirements, based on changes in system conditions and input from the ECAs. • In real-time, ECAs will request energy from the RTO, as described earlier. • The RTO will select the appropriate resources to meet the need and signal the SCs that are responsible for the resources to respond. The SCs are responsible to meet the terms of the contractual obligation to the RTO (portfolio response or unit specific, quantity, response time, and so on depending on the service).	to the RTO. • The RTO will procure the difference between the amounts self provided and the forecast. • In real time the RTO will dispatch IOS as needed. • The generation owner is responsible to meet the terms of the contractual obligation to the RTO (portfolio response or unit specific, quantity, response time, and so on depending on the service).	
3.3.	What obligations do RTO and ECA have to offer AS?	Pursuant to Order 2000, the RTO must offer AS as a provider of last resort. This	(to be determined)	See 2.2.2 above. RTO OATT AS schedules will present a matrix of prices for each BA.

		requirement is met fully through the process described above, in which the RTO acts as the agent for SCs who have not self-provided IOS resources (and for all SCs, in the case of non-self-providable ancillary services) by procuring Group 1-3 IOS resources through external-to the-RTO markets and procuring Group 4-5 IOS resources through longer-term procurement arrangements. Each Transmission Owner (TO) - but not ECAs per se - currently has an obligation under its FERC Order 888-compliant tariff to offer ancillary services to Eligible Customers who serve load connected to the TO's grid. This obligation would not be extinguished by joining the RTO (regardless of whether or not the TO chose to remain an ECA or turn over control area operation authority to the RTO) unless the TO's affiliated generation was granted market-based rate authority with no requirement to make ancillary services available. However, the obligation should not be expanded by virtue of the TO's participation in the RTO. The RTO-Coordinated Control Area Model envisions that, for those TOs whose resources have not been released to sell energy and/or capacity at market-based rates, the TO's generation arm would be obligated to offer to sell IOS resources to the SCs and RTO at cost-based rates. This "recourse contract"		Should be done as anticipated in Order 888 and pro forma OATT where transmission provider is unable to provide A.S. Transmission provider, in this case RTO, "arranges" for supply by others. RTO will have no generation and thus be unable to provide.

		obligation would be limited to the amounts of IOS capacity needed to meet the needs of those SCs who are responsible for loads connected to the TO's wires and to the RTO (for residual load connected to the TO's wires if such load may not have been scheduled by an SC, and for additional ancillary services requirements associated with the TO-connected loads).		
3.4.	How is market power mitigated?	The market power of owners of existing IOU resources which are not authorized to sell energy and/or capacity at market-based rates is mitigated through the recourse contracts described above. In addition, having the RTO act as coordinator of grid-wide ancillary services processes mitigates market power by creating grid-wide IOS markets and consolidating the split of markets into subregions that are based on TO boundaries. Physical system constraints rather than historical control area boundaries will now determine market boundaries, creating larger markets in which there is more competition. Allowing SCs to transfer ancillary services across flowgates with FTRs further reduces market power by allowing transfer even across those physical constraints. The RTO requirement that an efficient electronic trading exchange be put into place	Having the RTO act as the manager of the Ancillary Service begins to mitigate market power. Physical system constraints rather than historic Control Area boundaries will now determine markets. In addition a single set of standards for certification and performance will make the services more portable. Allowing generators to transfer ancillary services across flowgates with FTRs further reduces market power by allowing transfer even across those physical constraints. Additional options to mitigate market power (bid caps, "recourse" contracts, etc.) could be applied regardless of whether RTO West chooses an RTO-centric AS model or one based on multiple Control Areas.	Combination of cost-based rates from historic or franchised supplier and third party market-based sales. No LSE should be forced to market

		(at a minimum, as a mechanism for the RTO to use in its provider of last resort procurement process) will create liquidity and efficient and visible pricing, further mitigating market power. The RTO's use of grid-wide standards for certification and performance of IOS resources will make the services more portable. Additional options to mitigate market power (bid caps, "recourse" contracts, etc.) could be applied regardless of whether the RTO chooses the RTO-Coordinated Control Area Model, a model based on a single RTO-wide control area, or a model based on multiple Control Areas.		
4.	**Who is the IOS provider and AS custo mer?**	For Groups 1-3, the SCs are IOS resource providers and AS customers. Other entities (PSEs, LSEs, Customer Aggregators, Loads) either become SCs or interact with the RTO through their designated SCs. The "Transmission Service Provider" is actually the RTO, and its role is described throughout the document. The Transmission Owner and the Distribution Provider play no role in the IOS/AS markets for Groups 1-3, except to the extent that their bundled affiliates are required to make IOS resources available to the SCs and RTO under the terms described in Section 3.3 For Groups 4-5, the IOS resource providers are	For Groups 1-3, the SCs are IOS resource providers and AS customers. Other entities (PSEs, LSEs, Customer Aggregators, Loads) either become SCs or interact with the RTO through their designated SCs.	4.1 Scheduling Coordinator **(presumed provider and customer)** Avista prefers the BA definition 4.2 Transmission Service Provider Not directly 4.3 Purchasing/Selling Entity Selling entity will be generation function or independent generators. Purchasing entity will be load through a LSE or BA.

		the generators, dispatchable demands and wires owners that are capable of providing the IOS resources. The AS customers are, once again, the SCs, who are billed for these IOS resources through a grid uplift charge and/or through payments of the TOs' ATRRs. Finally, for Scheduling and Dispatch service, the provider is the RTO and the customers are the SCs. The TOs who continue to operate control centers are service providers/subcontractors to the RTO .		4.4 Load Serving Entity Purchaser/self supplier 4.5 Customer Aggregator Purchaser/self supplier if a LSE 4.6 Distribution Provider If a LSE 4.7 Load (end-use customer) Ultimately pays the bill because the obligation is incurred on its behalf.
5.	**Other Questions**			
5.1.	Is self supply allowed?	Yes, self-provision of IOS resources is allowed and encouraged for IOS Groups 1-3. Self-provision exempts the SC from paying the RTO for the RTO's procurement of the quantity of IOS resources that was self-provided by the SC. Note that self-provided IOS services are actually deployed for community use, and not for SC-specific contingencies and imbalances. Thus, even with self-provision, an SC will be exposed to real-time Balancing Energy costs (or payments) to the extent that the SC's injections in each Congestion Zone, adjusted for transmission losses, do not equal the SC's	Yes, product groups 1-3 can be self-supplied. Self-Provision exempts the SC from the last resort capacity costs charged by the RTO. Self Supply Self Provision - Self-supply is for community use , not for SC specific contingencies and imbalances, so although the exposure is fully hedgeable there will be some potential for imbalance energy costs (or payments) from the energy portion of self provision. For the capacity components of AS groups 1-3 The RTO determines the regulation, load	Yes, if the BA is a G&D it can self provide

		withdrawals from the Congestion Zone.	following, spinning, non-spinning and replacement requirements by zone. • The RTO posts a forecast SC obligation (as a percentage of load or other appropriate indicator). • SC purchases or sells AS inputs or obligations with other coordinators to clear it's obligation to the RTO. • An SC may use it's own certified resources or purchase rights from other certified resources. Eligible AS inputs include resources within the zone and resources outside the zone with FTRs to reach the zone. • Because the RTO may have minimum bid levels to operationally use the AS inputs SCs may also want or need to trade obligations in addition to inputs. • SC submits to the RTO the accumulated obligations and inputs • There is no capacity price associated with self provision in the view of the RTO. • Load Following, Spinning, Non-Spinning and Replacement Reserves have an energy price to determine the dispatch order and to hedge the SC exposure to energy use for general needs. • The RTO determines whether the self provided AS inputs meet the requirements within each zone. If the zone is deficient the RTO procures AS inputs in the market of last resort and passes the costs on to SCs who did meet their obligations.	

			• In real time the RTO dispatches AS inputs for the general needs of the zone (choosing the appropriate inputs as defined by the tariff). Under Self Tracking – Self tracking capacity would be held for SC specific use.	
5.2.	How is native load treated?	"Native load" is treated no differently than any other load from the RTO perspective. "Native load" is simply a group of bundled consumers that has a pre-designated SC. The RTO treats all SCs identically, regardless of whether the SCs represent bundled loads, unbundled loads, generators, wheel-throughs, or any combination thereof.	Native load is treated as any other load from the RTO perspective. Native load is a relationship between that load and its SC.	Everybody is somebody's native load. All loads will have historic supplier to rely upon until states change the system.
5.3.	How are existing contracts treated?	Existing Contracts for IOS can be submitted by the SC as self-provision or sold on the market, provided that the resources meet the RTO's technical standards and provided that the Existing Contracts do not place limitations on the ability to make such IOS available to SCs and/or the RTO. Existing Contract to sell AS would have to be honored by the responsible SC. Existing Contracts which specify AS requirements that are different than the requirements specified by the RTO (for example, a contract that specified a 4% Spinning Reserve requirement rather than the RTO's 3.5% standard) would continue to be honored by the parties to the contract. When	Existing contracts for IOS, if they qualify for RTO use can be submitted by the SC as self supply or sold on the market. Existing contract to sell AS would have to be honored by the responsible SC.	Need catalogued first and most should be extinguished. All post-888 contracts should roll over to RTO equivalents.

		the Transmission Provider schedules energy or capacity under the Existing Contract, the Transmission Provider would be responsible for the difference (credit or debit) between the RTO's requirements and the obligations of the transmission users under the Existing Contract. Whether the Transmission P Provider should be compensated (or pay) for this difference is a question that must be addressed in the Existing Contracts work group.		
5.4.	How will the answers above change under retail access?	Nothing changes under retail access, because the SC model which is proposed for use in all of the RTO's relationships with grid users does not distinguish in any way between bundled and unbundled retails loads. The only thing that changes under retail access is that the formerly-bundled retail loads may have a choice of changing their SCs.	Retail Access changes the SC – load relationship, rather than the SC – RTO relationship.	Depends upon state rules.
6.	**Implementation**			This approach is designed for ease of implementation. RTO's primary function is transmission scheduling and grid security. The smaller the intrusion the RTO makes into an already working generation market the easier the implementation will be.
6.1.	Are changes required for ECAs to implement on day one?	Systems and software will be required for: 1. Sending ACE signals from the ECAs to the RTO and receiving dynamic schedules from the RTO 2. Sending ECA IOS requests to the RTO	Software modifications to convert ECAs to Generation Control Centers. Signal from the RTO to the Generation Control Center to access IOS services (regulation, load following, and probably Spinning and Non-Spinning Reserves).	

		3. Processing curtailment instructions from the RTO	Retire approximately 500 AGC interchanges	
6.2.	What must the RTO have for day one?	Systems and software will be required for: 1. Receiving ACE signals from the ECAs and sending RTO dynamic schedules to the ECAs 2. Receiving ECA IOS requests to the RTO 3. RTO calculation of which IOS resources to deploy and which dynamic schedules to create between ECAs 4. Communicating with the SCs GCCs 5. Communicating curtailment instructions from the RTO to the ECAs 6. Coordinating dynamic schedules from the RTO to entities outside the RTO. 7. Settlements. Note that most of these will be required under any model.	AGC Software to become a control area (which will be needed if any Control Areas give up their CA). Put in place approximately 35 AGC interchanges (many of which already exist as part of the BPA CA boundary). Dynamic signal to Generation Control Centers.	
6.3.	Long term?	There are no additional long-term requirements As ECAs turn over control area authority to the RTO, there are no incremental changes to communications systems, control systems or to settlements systems.		